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PROCEEDINGS

OF THE BOSTON SOCIETY OF NATURAL HISTORY.

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BOST. SOC. NAT. HIST.

January 1, 1845.

The President, A. Binney, Esq. in the Chair.

The President communicated the following paper from Professor C. B. Adams, of Middlebury College, Vermont: —

SPECIERUM NOVARUM CONCHYLIORUM, IN JAMAICA REPERTORUM, SYNOPSIS, à C. B. Adams, Chim. et Hist. Nat. Prof. &c.*

PARS I.

Species Marinæ.

Marginella rubella. M. t. tenui, elongatâ, fasciis tribus rubellis ornatâ; anf. 4; spirâ vitreâ; labro albo, maculis tribus rubellis ornato, aperturam suprà angustante; columellâ 4–plicatâ. Diverg. 100°; spiræ long. .025 poll.; long. tot. .35 poll.; lat. .17 poll.

Erato (?) cypræoides. M. t. solidâ, albâ; anf. infra suturam fusco-canaliculatis; spirâ planâ, parvâ; aperturâ lineari, pro-

* The following species were collected by the writer in Jamaica, principally in February and March of the present year, (1844.) His limited opportunities for consulting valuable books render it probable that he has brought forward some species which have been described elsewhere, and that he has used names already preoccupied. As he contemplates the publication of a more extended article on the subject, any information from those into whose hands this paper may come, will be thankfully received. He cannot omit to acknowledge his indebtedness to Dr. Binney, especially, for the frequent use of his very rich and extensive library.

fundè emarginatâ; labro extrà crasso, intùs exilè crenulato; labio per totum transversim exilè plicato. Long. .325 poll.; lat. .2 poll.

Mitra albo-cincta. M. t. minimâ, fusiformi; anf. 6, fasciâ superiore fuscâ, inferiore albâ majori ornatis, striis decurrentibus et costis latis spiralium anfractuum latitudine brevioribus—instructis; canali brevi. Div. 40°; spiræ long. .11 poll.; long. tot. .2 poll.; lat. .1 poll. *M. savignyi* affinis.

Mitra exigua. M. t. minimâ, ovali-elongatâ, albidâ; anf. 6, suprà costellis plurimis et infrà costis latis—instructis, suprà atropurpureis, infrà fusco-maculatis; ultimo infrà sicut suprà insculpto; canali brevi. Spiræ long. .075 poll.; long. tot. .13 poll.; lat. .06 poll.

Columbella purpurascens. C. t. parvâ, pallidè purpureâ, striis decurrentibus supra labrum in fauces productis ornatâ; anf. $5\frac{1}{2}$; aperturâ elongatâ; columellâ suprà excavatâ. Div. 50°; spiræ long. .09 poll.; long. tot. .27 poll.; lat. .13 poll.

Columbella subcostulata. C. t. *C. pygmæa Sowb.* affini, exiliore, costis minùs elevatis, aperturâ latiore; fusco irregulariter maculatâ et reticulatâ. Div. ib.; spiræ long. .165 poll.; long. tot. .285 poll.; lat. .125 poll.

Buccinum candidissimum. B. t. parvulâ, albâ, solidâ, anf. $6\frac{1}{2}$, suprà striis decurrentibus, costis (anf. cujusque 7 vel 8) ad suturam suprà haud productis, latis, lævibus—ornatis; labro crassissimo; labio calloso. Div. 50°; spiræ long. .275 poll.; long. tot. .45 poll.; lat. .23 poll.

Buccinum concinnum. B. t. parvâ, nitidâ, flavo-fuscâ, fusco-maculatâ, maculis plerumque seriatis; anf. 7, costis parvis, et striis decurrentibus; labro solido et albo-varicato, intùs 6-denticulato; aperturâ lacunatâ. Div. 40°; spiræ long. .12 poll.; long. tot. .225 poll.; lat. .11 poll.

Buccinum obesum. B. t. parvâ, latâ, fusiformi, suprà et infrà acuminatâ, atrâ, albo-fasciatâ; anf. 5, costis parvis prominulis, et striis decurrentibus haud costas superantibus—instructis; labro incrassato sed acuto, intùs 6-denticulato, suprà sinuato; labio subcalloso. Div. 45°; spiræ long. .11 poll.; long. tot. .21 poll.; lat. .11 poll.

Purpura nodulosa. P. t. solidâ, parvâ, rhombicâ; anf. 5, nodulis seriatis, et striis subimbricatis decurrentibus, aterrimis, maculis albidis inter secundæ et quartæ serierum nodulos—

ornatis ; labro incrassato, intùs 4-denticulato. Div. 45° ; spiræ long. .32 poll. ; long. tot. .62 poll. ; lat. .32 poll.

Fusus muricoides. F. t. parvâ ; anf. 6, singulatim costis 9 vel 10 propinquis, et striis decurrentibus inequalibus partim granosis—instructis ; aperturâ violacescente, angustâ ; labro crasso, intùs albo-denticulato ; labio subrugoso ; canali brevi. Div. 40° ; spiræ long. .32 poll. ; long. tot. .6 poll. ; lat. .25 poll.

Pleurotoma albo-maculata. P. t. parvâ, rubro-fuscâ ; anf. 7, infrà longitudinaliter tuberculatis, suprà tuberculis minoribus transversis et striis pluribus granosis decurrentibus—instructis ; tuberculis et granulis albis ; sinûs ostio contracto ; canali brevissimo. Div. 35° ; spiræ long. .25 poll. ; long. tot. .48 poll. ; lat. .06 poll.

Pleurotoma albo-cincta. P. t. parvâ, rubro-fuscâ, anf. 6, suprà carinâ albo-tuberculatâ, infrà carinâ enodi—instructis, mediis striatis, striis creberrimis subtilissimis decurrentibus ; anf. ultimo alteris carinis tuberculosis, et fasciâ albâ ornato ; anf. etiam longitudinaliter costulatis, intersectionibus noduliferis ; canali brevi. Div. 45° ; spiræ long. .16 poll. ; long. tot. .28 poll. ; lat. .13 poll.

Pleurotoma nigrescens. P. t .parvâ, atro-violacescente ; anf. 8, sulco sinum sequente, exilissimè decussato—instructis, ceterùm granulosis, decussatis ; labro crassissimo ; sinu haud multùm profundo ; canali brevissimo. Div. 30° ; spiræ long. .2 poll. ; long. tot. .3 poll. ; lat. .11 poll.

Pleurotoma trilineata. P. t. minimâ, albâ, lineis tribus pallidè fuscis fasciatâ ; anf. 6½, subangulatis, lineis pluribus elevatis decurrentibus, et costulis longitudinalibus—instructis ; labro crasso ; sinu profundo ; canali brevissimo. Div. 25° ; spiræ long. .1 poll. ; long. .185 poll. ; lat. .075 poll.

Pleurotoma albida. P. t. parvâ, albidâ, lineâ flavo-fuscâ decurrente costulis interruptâ ; anf. 6, perconvexis, subangulatis, costulis crassis, et striis profundis decurrentibus minùs sæpè costulas superantibus—instructis ; sinu haud profundo ; canali subbrevi. Div. 30° ; spiræ long. .15 poll. ; long. tot. .26 poll. ; lat. .11 poll.

Pleurotoma multilineata. P. t. minimâ, flavido-fuscà, albo-multilineatâ ; anf. 6, singulatim costis 8 ad 10 latis, ad basim expansis, et striis creberrimis decurrentibus inequalibus—instructis ; suturâ profundâ ; sinu magno ; canali brevissimo.

Div. 35° ad 25° ; spiræ long. .11 poll. ; long. tot. .18 poll. ; lat. .08 poll.

Pleurotoma albo-vittata. P. t. parvâ, flavido-fuscâ, fasciâ albâ latissimâ—cinctâ ; suturâ parùm impressâ ; anf. 6, haud multùm convexis, singulatim costis 8 vel 9 latis, et striis creberrimis decurrentibus inequalibus—ornatis ; suturâ haud multùm impressâ ; sinu magno ; canali brevissimo. Div. 33° ad 23° ; spiræ long. .15 poll. ; long. tot. .25 poll. ; lat. .1 poll.

Pleurotoma candidissima. P. t. parvâ, candidissimâ ; suturâ profundâ ; anf. 5, suprà subangulatis, singulatim costis 8 vel 9 robustis subcompressis, et striis decurrentibus haud crebris parallelis—instructis ; canali brevissimo. Div. 35° ; spiræ long. .1 poll. ; long. .19 poll. ; lat. .085 poll.

Pleurotoma fusca. P. t. parvâ, fuscâ ; suturâ profundâ ; anf. 5, singulatim costis 8 vel 9, et multis striis decurrentibus inequidistantibus—instructis ; labro expanso ; sinu parvo ; canali brevissimo. Div. 35° ad 25° ; spiræ long. .12 poll. ; long. tot. .22 poll. ; lat. .1 poll.

Pleurotoma dubia, à *P. multilineatâ* haud multùm differt ; costæ angustiores sunt, et ad basim compressæ. Forsan var.

Pleurotoma minor. P. t. minimâ, solidâ, flavido-fuscâ, fasciis albis duabus aliquantò interruptis, (alterâ ad spiram pertinente, alterâ anf. ultimum infrà cingente,)—cinctâ ; anf. 6, subnodulosis, singulatim costis 9 robustis convexis, striis latis decurrentibus—instructis. Div. 25° ; spiræ long. .11 poll. ; long. tot. .16 poll. ; lat. .07 poll.

Pleurotoma fusco-lineata. P. t. parvâ, albidâ, lineis pluribus fuscis irregulariter interruptis cinctâ ; anf. 7, singulatim costis 10 ad 12 et striis profundis decurrentibus haud costas superantibus —instructis ; sinu minimè profundo ; canali brevissimo. Div. 25° ; spiræ long. .13 poll. ; long. tot. .2 poll. ; lat. .08 poll.

Pleurotoma elatior. P. t. minimâ, subconicâ, albidâ, fuscescente, lineis flavido-fuscis decurrentibus inequalibus à costis interruptis—ornatâ ; spirâ elongatâ ; anf. 6, haud multùm convexis, singulatim costis 12 haud robustis, et striis decurrentibus subprofundis, unâ profundiore—instructis ; sinu minimè profundo ; canali brevissimo. Div. 22° ; spiræ long. .125 poll. ; long. tot. .19 poll. ; lat. .075 poll.

Cerithium ambiguum. *C. lafondii, Kr.*, affine ; t. costis plu-

ribus, 20 ad 25, minoribus—instructâ, præcipuè elatiore minùsque robustâ.

	Div.	spiræ long.	long. tot.	lat.
C. lafondii:	23°;	.57 poll.;	.8 poll.;	.8 poll.
" *ambiguum:*	17°;	.65 " ;	.8 " ;	.2 "

CERITHIUM GIBBERULUM. C. t. minimâ, tenui, nigrescente; anf. 9, singulatim plicis 18, et striis decurrentibus latis 5 vel 6, intersectionibus nodiferis—instructis; anf. ultimo varice dorsali, plicis obsoletis et striis minoribus—instructo; aperturâ emarginatâ. Div. 30° ad 25°; spiræ long. .17 poll.; long. tot. .24 poll.; lat. .085 poll.

CERITHIUM IOTA. C. t. minimâ, atro-rubrâ; suturâ profundâ; anf. 10, plicis decurrentibus tribus, (anf. ultimi 4,) et plicis longitudinalibus minoribus, intersectionibus nodiferis—instructis; canali brevissimo. Div. suprà 25°, infrà nihil; spiræ long. .095 poll.; long. tot. .12 poll.; lat. .03 poll.

CERITHIUM VARIABILE. C. t. parvâ, solidâ, nigrâ, irregulariter albo-maculatâ; suturâ profundâ; anf. 9, convexis, striatis, striis creberrimis decurrentibus; spiræ anf. plicis 4 angustis decurrentibus, et plicis longitudinalibus, intersectionibus nodiferis—instructis; labro intùs incrassato et crenato; labio suprà uniplicato; canali brevi. Div. 30°; spiræ long. .34 poll.; long. tot. .51 poll.; lat. .2 poll.

CERITHIUM MUTABILE. C. t. parvâ, subtenui, nigrâ, rubescente, irregulariter albo-maculatâ; suturâ profundâ; anf. 9, haud multùm convexis, plicis decurrentibus pluribus, 3 majoribus, et plicis longitudinalibus inequalibus, intersectionibus nodiferis—instructis; canali brevissimo. Div. 33°; spiræ long. .22 poll.; long. tot. .22 poll.; lat. .15 poll.

CERITHIUM ALGICOLA. C. t. irregulariter albo et fusco-maculatâ, cærulescente; varicibus albis vel fuscis, penultimo ab ultimo semianfractum distante, alteris $\frac{2}{3}$ anf. distantibus; anf. 10, subangulatis, striis decurrentibus, pluribus exilioribus 5 majoribus granulosis, et plicis longitudinalibus—instructis; labio suprà uniplicato; canali brevi. Div. 35° ad 25°; spiræ long. .52 poll.; long. tot. .73 poll.; lat. .33 poll.

CERITHIUM BICOLOR. C. t. parvâ, solidiusculâ, albidâ, fasciâ rubro-fuscâ—cinctâ; anf. 15 (?), planulatis, lineis 5 elevatis decurrentibus, suprà (2 exceptis) obsoletis, et lineis elevatis longitudinalibus pluribus, intersectionibus nodiferis—instructis; anf.

ultimo plicâ fuscâ cincto ; columellâ uniplicatâ, plicâ decurrente ; canali brevi. Div. 15° ; aperturæ long. .08 poll. ; long. tot. .08 poll. ? ; lat. .13 poll.

Rissoa albida. R. t. magnâ, diaphanâ, albidâ ; apice acutissimo ; anf. 10, a costulis pluribus exilissimis, ad cujusque inferam partem obsoletis, et striis exilissimis decurrentibus, eleganter decussatis ; striis juxta suturam profundioribus, anf. angustantibus ; labio à labro suprà sinu disjuncto. Div. 28° ; spiræ long. .2 poll. ; long. tot. .31 poll. ; lat. .11 poll.

Rissoa affinis. Præcedenti affinis ; spirâ graciliore ; striis juxta suturam nullis ; costulis ad suturam infrà productis. Forsan var.

Rissoa scalarella. R. t. parvâ, solidâ, albâ ; anf. 8, singulatim costis 14 robustis ad extremitatem infrà productis—instructis ; aperturâ infrà latè haud profundè sinuatâ ; labro valdè incrassato. Div. 22° ; spiræ long. .1 poll. ; long. tot. .15 poll. ; lat. .06 poll.

Rissoa tervaricosa. R. t. tenui, diaphanâ, albidâ, interdum pallidè fusco exilissimè tessellatâ ; suturâ profundâ ; anf. 9, convexis, singulatim ter-varicosis, varicibus candidissimis, in seriebus tribus continuis, et striis exilissimis distantibus decurrentibus—ornatis. Div. 23° ; spiræ long. .17 poll. ; long. tot. .225 poll. lat. .08 poll.

Rissoa crassicosta. R. t. magnâ, crassâ, lacteâ ; anf. 7, costulis 11 vel 12, latis, obliquis, supra suturam profundam trajectis, et striis pluribus exilissimis decurrentibus costulas superantibus —instructis ; labro perincrassato, infrà haud sinuato. Div. 35° ; spiræ lon. .21 poll. ; long. tot. .3 poll. ; lat. .11 poll.

Eulima jamaicensis. E. t. gracili, lacteâ, diaphanâ, fasciâ albâ opacâ suturali—cinctâ ; suturâ lineari, subprofundâ ; anf. 13, planis, lævibus ; aperturâ minimâ ; labro expanso. Div. 20° ; spiræ long. .23 poll. ; long. tot. .325 poll. ; lat. .1 poll.

Chemnitzia babylonia. C. t. parvâ, lacteâ ; anf. (apice deflecto excepto) 4, carinis duabus perelevatis decurrentibus, intervallis concavis—ornatâ ; anf. ultimo quadricarinato ; labro à carinis pectinato. Div. 20° ; spiræ long. .05 poll. ; long. tot. .08 poll. ; lat. .03 poll.

Monodonta maculo-striata. M. t. parvâ, crassâ, intùs virescente, olivaceâ, extrà maculis subradiantibus elongatis paucis irregulariter ornatâ ; anf. $6\frac{1}{2}$, striis et lineis elevatis planulatis albo et nigro alternatìm maculatis decurrentibus—instructis ;

labro intùs subcrenulato, infrà bi- vel tri-dentato ; umbilico profundo. Operculo flavo ; anf. 15. Div. 100° ad 80° ; spiræ long. .3 poll. ; long. tot. .48 poll. ; lat. .5 poll. ; umbilici diam. .1 poll.

Monodonta angulata. M. t. parvâ, crassâ, olivaceâ, rubescente, maculis parvis quadratis albidis ornatâ ; spirâ conicâ ; suturâ minimè impressâ ; anf. 7, concavis, singulatim plicis 6 decurrentibus—instructis ; anf. ultimo acutè carinato, infrà plicis 8 cincto ; aperturâ subquadratâ ; umbilico angusto, subprofundo. Div. 75° ; spiræ long. .16 poll. ; long. tot. .325 poll. ; lat. .32 poll. *M. modulo* affinis.

Monodonta livido-maculata. M. t. albidâ, maculis pluribus lividis fuscescentibus, magnis, ornatâ ; suturâ profundâ ; anf. 6, subangulatis, striatis, striis latis inequalibus decurrentibus ; aperturâ transversâ, ovatâ ; labro infrà bi- vel ter-emarginato ; umbilico profundo, bi- vel tri-carinato. Div. 90° ; spiræ long. .45 poll. ; long. tot. .65 poll. ; lat. .75 poll. ; umbilici diam. .14 poll.

Turbo (?) pulchellus. T. t. minimâ, albidâ, maculis rubris quadratis inequalibus, majoribus nigrescentibus, serie decurrente dispositis, ornatâ ; suturâ profundâ ; anf. 5, mediis carinatis, lineis elevatis pluribus decurrentibus—instructis ; labro tenui ; umbilico nullo. Div. 45° ; spiræ long. .09 poll. ; long. tot. .165 poll. ; lat. .1 poll.

Scalaria modesta. S. t. subcrassâ, albidâ, haud nitente ; suturâ profundâ ; anf. 9, costulis 11 robustis acutis retrò subreclinibus, et striis decurrentibus exilissimis haud crebris—instructis ; ultimo anfractu haud carinato. Div. 35° ; spiræ long. .275 poll. ; long. tot. .4 poll. ; lat. .175 poll.

Nerita præcognita. N. t. crassâ, olivaceâ, albo-marmoratâ ; anf. 3, superioribus convexiusculis ; ultimo costulis rotundatis crebris, striatis, numerum (à 20 ad 25) et latitudinem in diversis exemplis disparibus—ornato ; labro acuto, à costulis eleganter pectinato, intùs juxta marginem polito, interiùs crasso et crenulato, et suprà infràque bituberculato ; labio medio excavato et bidentato, alibi plicato vel noduloso. Operculo pallidè murino, creberrimè papilloso. Long. 1.05 poll. ; lat. 1.3 poll.

Neritina pygmæa. N. t. minimâ, tenui, fuscâ, lævisculâ ; spirâ vix elevatâ, apice prominulo ; anf. 2½ ; aperturâ expansâ ;

labro tenui; labio candido, lævi; operculo flavido. Long. .1 poll.; lat. .13 poll.

Fissurella elongata. F. t. elongatâ, tenui, diaphanâ, fuscâ, albido-maculatâ, costulis 20 radiantibus, totidem brevioribus alternatim dispositis, et 40 brevissimis marginalibus ornatâ; incrementi striis maximis; anteriùs concavâ; posteriùs convexâ; intùs cœrulescente; fissurâ atro-marginatâ, mediâ utrùmque sinuatâ. Lon. .375 poll.; lat. .2 poll.; alt. .11 poll. Dec. ant.: Dec. post. : : 1 : 2.

Patella tenera. P. t. tenui, fragili, diaphanâ, albidâ, fusco-radiatâ, (radiis plerùmque 8) maculatâ, vel reticulatâ, exilè decussata, anteriùs et posteriùs convexâ; margine acuto, exilè pectinato. Long. .72 poll.; lat. .53 poll.; alt. .15 poll.; alt. exemp. long. .74 poll.; lat. .55 poll.; alt. .21 poll.; dec. ant.: dec. post. : : 5 : 8.

Patella albicosta. P. t. crassâ, atro-fuscâ, costulis 12 elevatis, totidem brevioribus, omnibus albis—instructâ; margine pectinato, juniorum fusco—et albo-maculato, seniorum albo. Long. .84 poll.; lat. .7 poll.; alt. .41 poll.; dec. ant.: dec. post. : : 4 : 5.

Chiton squalidus. C. t. albidâ, atro-maculatâ, maculis maximis, rugosa; areis a costâ robustâ discretis; valvis extremis costis 8 ad 10 instructis; margine membranaceo, setosa. Long. 1.15 poll.; lat. .7 poll.

Chiton costatus. C. t. albido atroque maculatâ; areis lateralibus elevatis, costulis 3 vel 4 papillosis instructis, posteriùs subspinosis; areis dorsi mediis lævibus, transversim striatis; inter areas declivitas est, profundè striata; margine squamoso, alternatim flavido-albo atroque. Long. 1.35 poll.; lat. .75 poll.

Chiton squamulosus. C. t. olivaceâ, lineâ pallidè virente dorsali—ornatâ; areis lateralibus squamosis inequalibus prostratis—obtectis; areis dorsi mediis sublævibus, puncto-striatis; margine exilè squamuloso, alternatim cinereo-virescente viridique. Long. .7 poll.; lat. .4 poll.

Chiton multicostatus. C. t. prælongâ, intùs rubellâ, extus pallidè virente, punctis albis et atro-virentibus, lineâque dorsali pallidâ ornatâ; areis lateralibus perelevatis, costatis, costis 6 ad 8 nodosis; areis dorsi costulis 20 gracilibus, compressis,—instructis; margine squamoso, alternatim virente alboque. Long. .9 poll.; lat. 42 poll.

Chiton purpurascens. C. t. prælongâ, purpureo-rubente, concentricè striatâ; margine lato, exilissimè squamuloso, cærulescente, alternatim pallidiore. Long. 1.1 poll.; lat. 5 poll.

Chiton papillosus. C. t. minimâ, latâ, virente, albido atroque crebrè maculatâ, papillosâ; areis a costulâ gracili discretis; margine exilissimè squamuloso, alternatim virente albidoque. Long. .21 poll.; lat. .13 poll.

Chiton erythronotus. C. t. parvâ, subelongatâ, flavido-albâ, irregulariter rubro-maculatâ; areis lateralibus costatis, costis nodulosis, areis dorsi striatis; margine squamuloso. Long. .55 poll.; lat. .3 poll.

Perna bicolor. P. t. convexâ, intùs argenteâ, extra pallii impressionem aterrimâ, splendente; impressione musculari bilobatâ, parte alterâ majori suborbiculari, alterâ cuspidatâ; ligamentis 7, robustis. Long. 7 poll.; alt. 1 poll.; lat. .33 poll.

Arca tenera. A. t. albidâ, subtenui, ellipticâ, decussatâ, mediâ compressâ; umbonibus planulatis, approximatis; costulis radiantibus crenulatis; striis concentricis pilearibus; dentibus paucis; hiatu minimo. Long. .8 poll.; alt. .5 poll.; lat. .4 poll.

Cardita ovata. C. t. ovatâ, lamellis decumbentibus inequalibus et striis radiantibus profundis lamellas persecantibus—ornatâ; lamellis posterioribus haud insectis, striatis; margine vix crenulato.

Genus Thetis.

G. t. *Astarte* affini, sed dente laterali remotâ anteriore in utrâque valvâ—instructâ; pallii impressione vix vel haud sinuatâ.

Thetis cerina. T. t. parva, lineis elevatis concentricis distantibus et striis radiantibus ornatâ, cerinâ; lunulâ vulvâque transversim rubro lineatis; umbonibus minimis, acutis, pallide virentibus; margine suprà angulato, alibi rotundato; pallii impressione subsinuatâ. Long. .42 poll.; alt. .39 poll.; lat. .21 poll.

Thetis parva. T. t. minimâ, albidâ, lamellis elevatis robustis concentricis ornatâ; umbonibus parvis, acutis; margine suprà angulato, alibi rotundato; pallii impressione simplici. Long. .16 poll.; alt. .14 poll.; lat. .09 poll.

Lucina granulosa. L. t. parvâ, globulosâ, albâ, nodulis subquincuncialibus plerùmque ornatâ; dentibus lateralibus obso-

letis, cardinalibus robustis. Long. .34 poll.; alt. .31 poll.; lat. .35 poll.

Lucina imbricatula. *L. pectini* affinis, sed t. breviore, crassiore, orbiculari, subequilaterali, costulis valdè imbricatis ornatâ. Long. .9 poll.; alt. .85 poll.; lat. .5 poll.

Lucina pulchella. L. t. parvâ, subcordatâ, rubellâ, albo-marginata, striis obliquis parallelis, posterioribus undatis, anterioribus divaricatis—ornatâ; dentibus lateralibus robustis. Long. .28 poll.; alt. .28 poll.; lat. .18 poll.

Amphidesma jayanum. A. t. orbiculari, flexuosâ, haud hiante, lamellis concentricis crebris, interdum obsoletis, striisque radiantibus exilissimis ornatâ; (juniorum intùs rubro-maculatâ; seniorum albidis vel flavis;) interdum rubro-radiatâ; dentibus 2, magnis, divaricatis, subremotis. Long. 1.41 poll.; alt. 1.36 poll.; lat. .7 poll.

Tellina decussatula. T. t. rosaceâ, suprà albidâ, iridescente, exilissimè decussatâ; dente sinistrâ posteriore obsoletâ. Long. 1 poll. alt. .65 poll.; lat. .29 poll.

Tellina nitens. T. t. nitidâ, rosaceâ, zonis pallidis ornatâ; parte posteriore elevatâ, infrà angulatâ; dentibus lateralibus anterioribus obsoletis. Lon. .75 poll.; alt. .4 poll.; lat. .17 poll.

Psammobia purpureo-maculata. P. t. brevi, posteriùs truncatâ, albidâ, maculis paucis purpureis cœrulescentibus, interdum obsoletis, ornatâ; ligamento brevi, crasso.

Psammobia affinis. Præcedenti affinis, sed t. fuscâ, atro-purpureo biradiatâ, exilissime decussatâ. Long. .66 poll.; alt. .51 poll.; lat. .25 poll.

Psammobia biradiata. Præcedenti affinis, sed t. anteriùs longiore, candidissimâ, radiis 2 sanguineis latis, brevibus, ornatâ. Long. .49 poll.; alt. .38 poll.; lat. .18 poll.

Psammobia cerina. P. t. parvâ, cerinâ, tenui, anteriùs procerâ et circulari, posteriùs angulatâ (angulo haud multùm truncato,) concentric exilissimè striatâ; dentibus parvis, prominentibus. Long. .39 poll.; alt. .31 poll.; lat. .17 poll.

PARS II.

Species terrestres.

Cyclostoma duffianum. C. t. magnâ, discoideâ, rubellâ albâque; anf. 4½, cylindraceis; umbilico lato, profundo; margine simplici. Div. 150°; lat. max. 1.9 poll.; lat. min. 1.45 poll.; alt. .87 poll. Gulielmo Duff, armig., conchyliorum Jamaicensium doctissimo, hæc species dedicatur.

Cyclostoma hillianum. C. t. sub-depressâ, candidâ, fasciis angustis fuscis interruptis ornatâ, decollatâ, anf. reliquis 5, vix-connexis, aculeis elongatis decussatim seriatis—elegantissimè insculptis; aperturâ ab anf. penultimo remotâ; labro latissimè planulato, plicato; umbilico lato, profundo; operculo albo, lamellâ spirali procerâ ornato. Div. 110°; alt. .32 poll.; lat. max. .47 pol.; lat. min. .37 poll.; Ricardo Hill, armig., rerum naturalium Jamaicensium doctissimo, hæc species dedicatur.

Cyclostoma lima. C. *lincinæ* affine, t. perexiliùs decussatâ, aculeis brevioribus, subtus costulis revolventibus majoribus instructâ; labro nunquam crenulato. Div. 56°; alt. .9 poll.; lat. max. .7 poll.; lat. min. .45 poll.

Cyclostoma bronnii. C. t. fuscâ, interdum subalbida, decollatâ; anf. 2½ perditis; anf. reliquis 4, suprà exilè crenulatis, striis longitudinalibus exilissimis parallelis creberrimis—eleganter insculptis; labro crassiusculo, suprà in triangulum parvum concavum producto; operculo albo, sub-duplici. Div. 58°; alt. .67 poll.; lat. max. .5 poll.; lat. min. .35 poll.

Cyclostoma fusco-lineatum. C. t. præcedenti affini, fasciis angustis fuscis interruptis ornatâ, suturâ haud multum crenulatâ, labro minore. Forsan var.? alt. .55 poll.; lat. max. .4 poll.; lat. min. .3 poll.

Cyclostoma pulchrius. C. t. fasciâ latâ, rubro-fuscâ, ornatâ, decollatâ; anf. 2½ perditis; anf. reliquis 4, exilissimè regulariter et elegantissimè decussatis; labro crasso, rotundato, albo; umbilico perangusto, profundo; operculo tenui. Div. 48°; alt. .56 poll.; lat. max. .38 poll.; lat. min. .3 poll.

Helicina leana. H. t. perdepressâ, pallidè rufâ, vel albidâ; epidermide exilissimè hirsutâ; anf. 4½, haud multùm convexis, striis decurrentibus exilissimis—ornatis; anf. ultimo haud angulato; aperturâ a labri dentibus duobus obtusis suprà et infrà

contractâ; operculo tenui. Div. 135°; alt. .13 poll.; lat. max. .27 poll.; lat. min. .22 poll.

Helicina lineata. H. t. depressâ; anf. 4½, lineis elevatis parallelis distantibus decurrentibus—ornatis; anf. ultimo a lineâ majori subangulato; aperturâ *H. leanæ* simili. Div. 112°; alt. .09 poll.; lat. max. .15 poll.; lat. min. .13 poll.

Helicina solitaria. H. t. depressâ, rubrâ, fuscescente; anf. 4½, lævibus; ultimo nunquam angulato; aperturâ semicirculari; labio infrà emarginato; columellâ acutâ; labro subtenui, extrà flavo; operculo tenui. Div. 115°; alt. .22 poll.; lat. max. .35 poll.; lat. min. .31 poll.

Truncatella succinea. T. t. magnâ, succineâ-rubente, decollatâ; anf. 5 vel 5½ perditis, anf. reliquis 3½ vel 4, costis crebris (ultimi obsoletis)—ornatis; aperturâ albidâ; operculo convexo, calcareo, corneo-marginato. Div. 22°; spiræ long. post decoll. .2 poll.; long. tot. .31 poll.; lat. .13 poll.

Truncatella cumingii. T. t. parvâ, succineâ, rubente, scalariformi, decollatâ; anf. 4. perditis; anf. reliquis 4, singulatim costis 9 robustis acutis—ornatis; operculo subcorneo. Div. 22° ad 18°; spiræ long. post decoll. .12 poll., antèa .18 poll.; long. tot. .17 poll.; lat. .08 poll.

Truncatella scalariformis. T. t. solidâ, elongatâ, decollatâ; anf. 4 vel 5 reliquis, singulatim costis 10 robustis et striis decurrentibus exilissimis—ornatis. Div. 20°; long. post decoll. .16 poll.; lat. .08. poll.

Pedipes globulosus. *P. quadridens? Pfr.* P. t. globulosâ, crassâ, castaneâ; lineis elevatis, inequalibus, inequidistantibus, decurrentibus, ornatâ; labro acuto, intùs incrassato, suprà unidentato; labio suprà dente maximâ, lamelliformi, transversâ, ornato; columellâ bidentatâ; dentibus et columellâ albis. Div. 90°; spiræ long. .08 poll.; long. tot. .19 poll.; lat. .14 poll.

Succinea contorta. S. t. corneâ; spirâ minimâ; anf. 2⅓, perconvexis, perobliquis; aperturâ maximâ, obliquâ, ellipticâ. Div. 80°; spiræ long. .08 poll.; long. tot. .23 poll.; lat. max. .21 poll.; lat. min. .1 poll.

Bulimus octonoides. B. t. parvâ, albidâ, elongatâ; anf. 7, perconvexis; labro tenui; columellâ rectâ; *B. octono* simili, speciei quam *Gen. Achatina* habeat. Div. 22°; spiræ long. .22 poll.; long. tot. .31 poll.; lat. .1 poll.

Bulimus pallidus. B. t. parvâ, tenui, diaphanâ, corneâ, elon-

gatâ ; anf. 5, convexis ; labro tenui ; columellâ rectâ. Div. 35° ; spiræ long. .16 poll. ; long. tot. .27 poll. ; lat. .13 poll.

Bulimus procerus. B. t. parvâ, nitidâ, tenui, diaphanâ, flavido-fuscâ, perelongatâ ; anf. 8 ad 10, haud multùm convexis ; labro tenui ; columellâ tortâ. Div. 18° ad 14° ; spiræ long. .5 poll. ; long. tot. .63 poll. ; lat. .14 poll.

Bulimus læviusculus. B. t. minimâ, tenui, nitidâ, diaphanâ, ovatâ, elongatâ ; anf. 6, haud multùm convexis ; striis paucis, distantibus, exilissimis, longitudinalibus—ornatis ; aperturâ elongatâ, suprà angustâ, acutâque ; labro tenui, infrà retracto ; columellâ tortâ. Div. 18° ; spiræ long. .16 poll. ; long. tot. .25 poll. ; lat. .075 poll.

Bulimus striatella. B. t. parvâ, tenui, nitidâ, diaphanâ, elongatâ ; anf. 7, convexis, striis robustis, parallelis—ornatis ; aperturâ latâ ; labro tenui ; columellâ haud multùm tortâ. Div. 30° ; spiræ long. .15 poll. ; long. tot. .2 poll. ; lat. .07 poll.

Achatina iota. A. t. minimâ, gracili, corneâ ; anf. 4, latissimis, lævibus ; aperturâ elongatâ, suprà acutissimâ ; columellâ arcuatâ. Div. 12° ; spiræ long. .08 poll. ; long. tot. .135 poll. ; lat. .045 poll.

Achatina pellucens. A. t. parvâ, nitidâ, gracili, corneâ, striis exilissimis longitudinalibus, suprà crebris, infrà distantibus —ornatâ ; anf. 7 ; labro tenui, infrà retracto ; columellâ arcuatâ. Div. 14° ; spiræ long. .19 poll. ; long. tot. .27 poll. ; lat. .07 poll.

Achatina costulata. A. t. parvâ, conicâ, tenui, diaphanâ, fuscescente, atro-fusco bifasciatâ ; suturâ profunda ; anf. 8, suprà subangulatis, costulis gracillimis crebris—instructis ; labro tenui, infrà retracto ; columella haud multùm arcuatâ. Div. 20° ; spiræ long. .23 poll. ; long. tot. .335 poll. ; lat. .1 poll.

Achatina phillipsii. A. t. tenui, diaphanâ, elongatâ, subfusiformi, pallidè fuscescente, lineis atro-fuscis paucis distantibus longitudinalibus—ornatâ ; anf. 7, suprà a lineâ infra-suturali impressis, striatis, striis distantibus ; labro tenui, infrà retracto ; columellâ haud multùm arcuatâ. Div. 20° ; spiræ long. .5 poll. ; long. tot. .73 poll. ; lat. .13 poll.

Achatina propinqua. Præcedenti affinis, forsan var. ; sed t. lineis longitudinalibus crebris instructâ, sine lineâ infra-suturali ; anf. 6 ; columellâ rectâ. Div. 18° ; spiræ long. .32 poll. ; long. tot. .48 poll. ; lat. .13 poll.

Achatina vicina. Forsan *A. Phillipsii* var.; sed t. striis longitudinalibus crebris—instructâ, nunquam fusco-fasciatâ; lineâ infra-suturali a suturâ plus remotâ, spirâ breviore. Div. 22°; spiræ long. .3 poll.; long. tot. .54 poll.; lat. .175 poll.

Achatina griffithsii. A. t. tenui, diaphanâ, pallidè fuscescente, lineis atro-fuscis longitudinalibus paucis distantibus—ornatâ; anf. 7½ a lineâ infra-suturali impressis, costulatis, costulis creberrimis haud multùm elevatis et rotundatis; aperturâ elongatâ, suprà acutâ, infrà subcanaliculatâ; labro tenui, medio angulato, infrà valdè retracto; columellâ valdè contortâ. Div. 28°; spiræ long. .46 poll.; long. tot. .81 poll.; lat. .275 poll.

Cylindrella (?) pygmæa. C. t. minimâ, conicâ, gracillimâ, regulariter striatâ, striis latis; anf. 7, convexis; aperturâ obliquâ; labro haud latè reflexo. Div. 10°; spiræ long. .195 poll.; long. tot. .35 poll.; lat. .04 poll.

Cylindrella cumingii. C. t. magnâ, candidâ, subfusiformi, longissimâ, heterostrophâ, costulis minimis obliquis regularibus rotundatis creberrimis—ornatâ, latè decollatâ; anf. 10 vel 11 perditis, superis perconvexis; anf. reliquis 8 vel 9; aperturâ ellipticâ, in faucibus valdè contractâ, in labrum latissimum acutum expansâ; anf. ultimo carinâ semi-revolvente aperturam subeffusam faciente—instructo. Div. suprà 10°; long. tot. 1.4 poll.; post decoll. long. 1.15 poll.; lat. .19 poll.

Cylindrella cylindrus. C. t. rubrâ, cylindraceâ, præcedenti similiter sed exiliùs insculptâ, latè decollatâ; anf. reliquis 12, haud multùm convexis; aperturâ subovatâ, in labrum subtenue expansâ; anf. ultimo acutè carinato. Long. post decoll. .82 poll.; lat. .15 poll.

Cylindrella seminuda. C. t. parvâ, albidâ, subfusiformi, latè decollatâ; anf. 10 vel 11 perditis; anf. reliquis 9 suprà subangulatis, mediis planulatis, costatis, costis pluribus prominentibus; anf. superis mediis obsoletè costatis; anf. ultimo bicarinato; aperturâ ab anf. penultimo latè disjunctâ; labro expanso, tenui. Long. post decoll. .33 poll.; lat. .09 poll.

Pupa fusiformis. P. t. fusiformi, nitidâ, exilissimè striatâ, opacâ, cinereâ, decollatâ; anf. 5 vel 6 perditis, planulatis; anf. 8 reliquis, haud multùm convexis, albo-fasciatis, fasciâ infra-suturali; labro solido, albo, rotundato, sinuoso, suprà haud continuo; umbilico angusto. Long. post decoll. .8 poll.; lat. .27 poll.

Pupa nobilior. P. t. magnâ, crassâ, opacâ, stramineâ, striis obliquis creberrimis parallelis eleganter insculptâ, infrà cylindraceâ, suprà tereti; spirâ longissimâ, decollatâ; anf. perditis 15! anf. reliquis 10; labro lato, crasso, continuo, albo, anf. penultimo appresso. Long. partis amissæ .6 poll.; long. post decoll. 1.18 poll.; tot. 1.78 poll.; lat. .37 poll. Species nobilis, notabilis!

Pupa obesa. P. t. tenui, diaphanâ, pallidè fuscescente, subfusiformi, striis obliquis costiformibus ornatâ, suprà concavé et breviter tereti, decollatâ; anf. 6 vel 7 perditis; anf. 7 vel 8 reliquis; labro tenui, albo, reflexo, continuo, ab anf. penultimo disjuncto. Long. partis amissæ .13 poll.; long. post decoll. .57 poll.; lat. .235 poll.—Var. densestriata, t. majore, striis exilissimis creberrimis ornatâ.

Pupa rubella. *P. cylindro*, Desh. affinis; sed t. minore, ardenter rubrâ; spirâ suprà graciliore; anf. 14 perditis, 8 reliquis; labro tenui, ab anf. penultimo disjuncto. Long. partis amissæ .43 poll.; long. post decoll. .7 poll.; lat. .3 poll.

Pupa tenuidens. *P. ovatæ*, Say, affinis, et magnitudinis ejusdem; aperturâ suprà dente magnâ lamelliformi intùs productâ, infrà alterâ simili, minore, oppositâ; duobus alteris, unâ utrinque, oppositis.

Helix peracutissima. H. t. magnâ, imperforatâ, lenticulari, subtenui, fuscâ, exilè sagrinatâ; anf. 5; inferis suprà concavis; ultimo medio in angulum acutissimum lamelliformem expanso, subtùs convexo; aperturâ perdepressâ, infrà *H. sinuatæ* Müll. similiter 4-dentatâ; labro medio acutè angulato. Div. 140°; alt. .6 poll.; lat. max. 1.6 poll.; lat. min. 1.43 poll.

Helix nemoraloides. *H. nemorali* affinis; sed t. subtùs valdè planulatâ; apice plus elevatâ; anf. 5; anf. ultimo fasciis tribus fuscis semper ornato; superis bifasciatis. Magnit. sicut in *H. nemorali*.

Helix subconica. H. t. tenui, latè subconicâ, imperforatâ, flavido-fuscâ, atro-fusco variè lineatâ; anf. 5, haud multùm convexis, exilè striatis; anf. ultimo subangulato, subtùs convexo; aperturâ subrectangulari, curviter depressâ; labro tenuissimo; columellâ rectâ, acutâ. Div. 100°; alt. .43 poll.; lat. max. .67 poll.; lat. min. .57 poll.

Helix subpyramidalis. H. t. tenui, latè subconicâ, diaphanâ, pallidè corneâ; apice subacutâ; suturâ profundâ; anf. 6, planulatis, superis infrà obtusè angulatis, ultimo medio angulato, subtùs

convexo ; labro tenuissimo ; umbilico angusto, profundo. Div. 90° ; alt. .2 poll. ; lat. max. .27 poll. ; lat. min. .24 poll.

Helix depressa. Præcedenti affinis ; sed t. perdepressâ ; apice obtusâ ; umbilico latiore. Div. 155° ; alt. .1 poll. ; lat. max. .25 poll. ; lat. min. .22 poll.

Helix sincera. H. t. parvâ, depressâ, diaphanâ, pallidè corneâ, costulis crebris ornatâ ; anf. 4½, perconvexis ; anf. ultimo rotundato ; aperturâ sub-orbiculari, ab anf. penultimo valdè invasâ ; labro tenui ; umbilico lato. Div. 160° ; alt. .075 poll. ; lat. max. .15 poll. ; lat. min. .13 poll.

Helix opalina. H. t. parvâ, perdepressâ, suprà convexâ, diaphanâ, nitidâ, pallidè corneâ, exilissimè striatâ, infrà indentatâ, haud umbilicatâ ; anf. 5, suprà a lineâ subsuturali impressis ; aperturâ infrà carinâ candidâ intùs decurrente calloque umbilicari candidâ—instructâ ; labro tenui. Div. 145° ; alt. .135 poll. ; lat. max. .3 poll. ; lat. min. .26 poll.

Helix pellucida. H. t. parvâ, pallidè corneâ, diaphanâ, exilissimè et creberrimè striatâ ; spirâ latè conicâ ; anf. 6, perconvexis ; ultimo magno, rotundato ; aperturâ suborbiculari, ab anf. penultimo valdè invasâ ; labro tenuissimo ; umbilico parvo. Div. 110° ; alt. .2 poll. ; lat. max. .28 poll. ; lat. min. .25 poll.

Helix peraffinis. Præcedentis var. ? sed t. spirâ depressâ, convexâ ; umbilico multo latiore. Div. 140° ; alt. .17 poll. ; lat. max. .3 poll. ; lat. min. .25 poll.

Helix arboreoides. H. t. discoideâ, tenui, nitidâ, diaphanâ, pallidè corneâ, exilissimè striatâ ; anf. 7, angustis, a lineâ subsuturali impressis ; ultimo rotundato, subtùs latè et profundè indentato ; aperturâ sub-ovata, ab anf. penultimo valdè invasâ ; labro tenuissimo. Div. 140° ; alt. .3 poll. ; lat. max. .59 poll. ; lat. min. .51 poll.

Helix tenerrima. H. t. tenuissimâ, subglobosâ, diaphanâ, fuscâ, pallidè virente, imperforatâ ; anf. 5, convexis ; ultimo maximo, inflato, subtùs convexo ; aperturâ magnâ, suborbiculari ; labro tenuissimo ; columellâ infrà expansâ. Div. 115° ; alt. .5 poll. ; lat. max. .72 poll. ; lat. min. .56 poll.

Helix dioscoricola. H. t. minimâ, tenui, subglobosâ, imperforatâ, anf. 3, perconvexis ; ultimo rotundato, subtùs angustè indentato ; labro tenui. Div. 70° ; alt. .05 poll. ; lat. max. .06 poll. ; lat. min. .05 poll.

HELIX JAYANA. *H. epistylium*, *Müll.*, affinis ;

H. jayana ;	H. epistylium ;
dente unâ lamelliformi longissimâ ;	dentibus tribus, obliquis, tortis, brevibus ;
t. latiore, subtùs latissimè et profundè indentatâ ;	t. angustiore, subtùs perconvexâ, angustè indentatâ ;
anf. 9½.	anf. 9.
Alt. .9 poll. ; lat. max. 1.18 poll. ; lat. min. 1.1 poll.	Alt. .1 poll. ; lat. max. .1 poll. ; lat. min. .9 poll.

PARS III.

SPECIES FLUVIATILES.

PALUDINA RIVULARIS. P. t. minimâ, lævi, corneâ, elongatâ ; spirâ conicâ, acutâ ; anf. 6 ; aperturâ ovatâ. Div. 30° ; spiræ long. .07 poll. ; long. tot. .11 poll. ; lat. .05 poll.

MELANIA SPINIFERA. M. t. minimâ, corneâ ; anf. 6, angulatis, angulo spinifero ; ultimo subtùs striis exilissimis revolventibus insculpto ; aperturâ suprà et infrà angulatâ. Div. 45° ; spiræ long. .09 poll. ; long. tot. .17 poll. ; lat. .1 poll.

PLANORBIS DENTIFERUS. *P. dentato*, *Gould*, affinis ; t. anf. 4, ultimo quam penultimo, haud multò latiore ; sed *P. dentatus* ultimum maximum habet, (v. fig. Gouldianam) ; dentium labialium dextrâ bifidâ, magnâ ; dentibus sicut in specie Gouldianâ dispositis.

Mr. Phineas W. Blunt was elected a member of the Society.

DONATIONS TO THE CABINET.

Phials containing specimens of sugar, and molasses or syrup made from the cornstalk, from Dr. C. T. Jackson, received by him from Mr. Ellsworth, Commissioner of Patents, Washington.

A collection of marine and terrestrial shells, from Jamaica. From Prof. C. B. Adams.

A large slab, containing beautiful specimens of Fucoides. From Prof. Henry D. Rogers.

Additions to the Library.

A Report on American Coals, and their comparative power and efficiency in generating Steam, and for other purposes. By Prof. Walter R. Johnson. 8vo. Washington. From Hon. R. C. Winthrop.

A Final Report on the Geology of New Hampshire. By Dr. C. T. Jackson. 4to. 1844. From the Author.

A Public Discourse, in Commemoration of Peter S. Du Ponceau, LL. D., late President of the American Philosophical Society, &c. &c. By Robley Dunglison, M. D. Philadelphia, 1844. From the Society.

Memoirs of William Maclure. By Samuel G. Morton, M. D., &c. Philadelphia, 1844. From the Author.

List of Specimens of Myriapoda in the British Museum. 18mo. London, 1844. From the British Museum.

List of Specimens of Birds in the same. Part I. 18mo. London, 1844. From the same.

Catalogue of Tortoises, Crocodiles, and Amphisbæneans in same. 18mo. London, 1844. From the same.

January 15, 1845.

The President in the Chair.

The President communicated a paper from Dr. J. W. Mighels, of Portland, Maine, a Corresponding Member, entitled "Descriptions of Shells from the Sandwich Islands, and other localities." In this paper the author characterizes the following species, which he supposes to be hitherto undescribed.

Helix intercarinata. Shell depressed, subdiscoid, brown, mottled with a darker color; umbilicus deep; whorls five, convex, with fine, raised incremental striæ; aperture semilunate, with two thin, elevated, keel-like laminæ, placed longitudinally

upon the intruded body whorl, and extending into the depth of the shell,—and five equidistant teeth within the external lip, which is simple and thin. Diameter, $\frac{2}{15}$ inch. *Hab.* Oahu.

Helix subrutila. Shell orbicular, depressed, pellucid, smooth, shining, yellowish, imperforate, subcarinate; whorls five, slightly convex; aperture semilunate, slightly gibbous, lip simple, thin. Diameter, $\frac{3}{10}$ to $\frac{4}{10}$ inch. *Hab.* Oahu.

Helix tiara. Shell low turbinate, yellowish, with dark brown zig-zag lines crossing the whorls, when young and fresh; umbilicus wide and deep; incremental striæ rather coarse; whorls five to six, convex; aperture circular, modified by the last whorl; lip simple, acute. Diameter, about $\frac{1}{2}$ inch. *Hab.* Kauai.

Helix jugosa. Shell depressed, subdiscoidal, reddish brown; umbilicus broad and deep; whorls five, convex, with numerous, raised, incremental lines; aperture circular, modified by the last whorl, with a thin, elevated lamina, extending into the depth of the shell; lip simple, thin. Diameter, $\frac{9}{40}$ inch. *Hab.* Waioli.

Helicina laciniosa. Shell orbicular, convex, reddish brown, interspersed with irregular light spots; whorls five, more or less flattened, with two or three raised lines, revolving over the middle of the outer whorl; aperture semilunar; lip simple, acute. Diameter, $\frac{3}{20}$ inch. *Hab.* Oahu.

Helicina rotelloidea. Shell orbicular, low conical, convex at the base, sometimes reddish brown, sometimes greenish, with obscure light spots, surface smooth; whorls about $3\frac{1}{2}$, convex; aperture semilunate; lip simple, acute. Diameter, from $\frac{1}{10}$ to $\frac{8}{35}$ inch. *Hab.* Oahu.

Pupa admodesta. Shell minute, ovate, greenish brown; whorls $3\frac{1}{2}$, convex; incremental striæ very fine; aperture circular, unarmed; lip simple, thin, slightly inflected; umbilicus small. Length, $\frac{1}{20}$ inch, diameter, $\frac{1}{40}$ inch. *Hab.* Oahu.

Bulimus armatus. Shell sinistral, rarely dextral, conical, brown, or yellowish, sometimes with a light, revolving band below the suture, perforate; whorls five, convex; aperture oblong-ovate, with a thin, flexuous, lamellated tooth on the transverse lip, and a small tooth or fold on the columellar lip; outer lip thin, slightly reflected. Length, $\frac{1}{3}$ inch, diameter, $\frac{1}{5}$ inch. *Hab.* Hawaii.

Bulimus pumicatus. Shell dextral, conical, polished, glossy, light horn color, imperforate; whorls seven, slightly convex;

aperture, oval, small, with a delicate fold on the left side; lip simple, acute. Length, $\frac{1}{5}$ inch, diameter, $\frac{3}{20}$ inch. *Hab.* Oahu.

Bulimus scutilus. Shell dextral, cylindrical, turreted, white, polished, imperforate; whorls six, convex; aperture elongate-oval; lip simple, acute. Length, $\frac{7}{30}$ inch, diameter, $\frac{3}{35}$ inch. *Hab.* Oahu.

Bulimus clausinus. Shell dextral, ovate-conic, thick and solid, white, smooth, glossy, sometimes with an obscure, narrow, yellowish band, revolving with the suture and passing over the middle of the body whorl; whorls five, convex; aperture subovate; lip yellowish, thickened, coalescing with the body whorl and forming an enamel on the left side of the aperture. Length, about $\frac{7}{10}$ inch, diameter, $\frac{2}{5}$ inch. *Hab.* Hawaii.

Partula virgulata. Shell ovate-conic, light fawn color, beautifully adorned with dark brown bands, more or less numerous, imperforate; whorls five, convex; incremental striæ delicate; aperture oblong; lip reflected, slightly inflected. Length, 1 inch, diameter, $\frac{3}{5}$ inch. *Hab.* Waianai.

Achatina accincta. Shell dextral, conical, horn color, smooth, polished, imperforate; whorls six, convex, with an impressed revolving line just below the suture; aperture semi-ovate; lip simple, acute. Length, $\frac{4}{15}$ inch, diameter, $\frac{2}{15}$ inch. *Hab.* Oahu.

Achatina turricula. Shell cylindrical, turreted, sometimes dark, sometimes light brown, imperforate; whorls ten, convex, more or less distinctly striate transversely; incremental striæ coarse; aperture oblong; lip simple, acute. Length, $2\frac{3}{4}$ inches, diameter, $\frac{4}{5}$ inch. *Hab.* Oahu.

Achatinella nubilosa. Shell dextral, ovate, conic, thin, variously mottled with dark brown on a light ground, imperforate; whorls six, convex; aperture semicircular; lip simple, acute. Length, $\frac{7}{10}$ inch, diameter, $\frac{2}{5}$ inch. *Hab.* Oahu.

Achatinella vestita. Shell sinistral, acuminate-conical, light brown, or white, with beautiful, narrow, dark brown bands, more or less numerous, imperforate; whorls six, convex; aperture semilunate; lip reflected. Average length, 1 inch, diameter, $\frac{1}{2}$ inch. *Hab.* Waianai and Hawaii.

Achatinella viridans. Shell dextral, elongate-conic, green, with light streaks intermixed, imperforate; whorls five, convex, with a revolving, slightly impressed line below the suture; aper-

ture subovate, stained with a pink color just within the margin; lip slightly thickened. Length, $\frac{3}{4}$ inch, diameter, $\frac{7}{15}$ inch. *Hab.* Oahu.

Achatinella mustelina. Shell dextral, conical, dark brown, with a light revolving band at the suture, perforate; whorls seven, convex; aperture oblong; lip simple, acute. Length, 1 inch, diameter $\frac{9}{20}$ inch. *Hab.* Waianai.

Achatinella cingula. Shell dextral, ovate-conic, horn color, smooth and polished, with a narrow brown band accompanying the suture, imperforate; whorls seven, convex; aperture small, subovate; lip simple. Length, $\frac{11}{20}$ inch, diameter, $\frac{1}{4}$ inch. *Hab.* Oahu.

Achatinella venusta. Shell sinistral, conical, body whorl large and tumid, reddish yellow, beautifully ornamented with black zig-zag lines, more or less numerous and regular, perforate; whorls six, convex; aperture subovate; lip simple, acute. Length, $\frac{3}{5}$ inch, diameter, $\frac{4}{5}$ inch. *Hab.* Oahu.

Achatinella picta. Shell sinistral, short, thick, conical, light yellow, with black zig-zag lines, more or less numerous, perforate; whorls six, convex; aperture campanulate; lip simple, acute. Length, $\frac{7}{10}$ inch, average diameter, $\frac{2}{5}$ inch. *Hab.* Oahu.

Achatinella inornata. Shell dextral, elevated, turreted, sometimes straw-colored, sometimes dark brown, unadorned, perforate; whorls seven, convex; aperture subovate; lip simple, acute. Length, $\frac{3}{4}$ inch, diameter, $\frac{3}{10}$ inch. *Hab.* Oahu.

Succinea patula. Shell ovate, pellucid, fragile, yellowish; last whorl very large, composing almost the whole shell, there being only about half a volution above it, forming a minute knob; aperture oval, very large and open; lip very thin. Length, $\frac{1}{2}$ inch, breadth, $\frac{2}{5}$ inch. *Hab.* Oahu.

Succinea caduca. Shell sub-ovate, very thin and fragile, horn color; whorls about two and a half, the last very large; spire rather prominent; aperture elongated-oval; lip thin. Length, $\frac{7}{20}$ inch, breadth, $\frac{1}{5}$ inch. *Hab.* Oahu.

Physa umbilicata. Shell subovate, gibbous, reddish brown; whorls about three and a half; aperture campanulate, oblique; columella fold prominent; outer lip rather thick; umbilicated. Length, $\frac{7}{20}$ inch, breadth, $\frac{3}{10}$ inch. *Hab.* Oahu.

Physa producta. Shell elongate-oval, thin, fragile, pellucid, horn color, imperforate; whorls four; suture well impressed;

aperture pyriform, half the length of the shell; columella fold conspicuous; lip thin. Length, $\frac{9}{20}$ inch, breadth, $\frac{1}{5}$ inch. *Hab.* Oahu.

Paludina porrecta. Shell elongated, turreted, thin, smooth, greenish, imperforate; whorls six, very convex; suture deep; aperture ovate; lip continuous. Length, $\frac{9}{40}$ inch, diameter less than $\frac{1}{10}$ inch. *Hab.* Oahu.

Paludina anthracina. Shell elongate-conic, thin, smooth, brown, covered with a black pigment, imperforate; whorls five, convex; aperture subovate; lip continuous, acute. Length, $\frac{4}{25}$ inch, diameter, $\frac{1}{15}$ inch. *Hab.* Tortola.

Sigaretus filicatus. Shell orbicular-ovate, rather thick, white, umbilicated; whorls about two, the last two of which composes nearly all the shell; external surface beautifully sculptured, being covered with triangular ribs placed longitudinally, and numerous transverse striæ; aperture rounded oval. Length, $\frac{2}{5}$ inch, breadth nearly equal to the length. *Hab.* Zanzibar, eastern Africa.

Solarium implexum. Shell depressed, subdiscoid, grayish white, with a few brown spots; whorls three, flattened, with five rounded, revolving ridges on each, intersected by numerous, impressed, transverse striæ; aperture circular; umbilicus large and deep. Diameter, $\frac{4}{15}$ inch. *Hab.* Oahu.

Solarium cyclostomum. Shell orbicular, convex, ash colored or greenish; whorls four to five, convex, with five, revolving ridges, intersected by impressed transverse striæ; suture, deep; aperture circular; umbilicus deep; operculum horny, spiral. Diameter, $\frac{3}{10}$ inch. *Hab.* Oahu.

Turbo rubricinctus. Shell minute, orbicular-conical, white, with numerous, impressed, revolving bands of a superb vermilion color, imperforate; whorls four, convex; aperture circular. Diameter, $\frac{1}{20}$ inch. *Hab.* Oahu.

Cerithium gracilentum. Shell turreted, fusiform, brown and white, spotted or banded, whorls ten to twelve, flattened, with four unequal, acute, elevated revolving ridges on each; aperture sinistral, subovate; canal tubular, deflected, twisted. Length of the largest, $\frac{7}{10}$ inch. diameter, $\frac{1}{5}$ inch. *Hab.* Oahu.

Cerithium maculosum. Shell conical, white, with zig-zag lines and spots, polished; whorls six, angular, tuberculated, transversely striated; aperture ovate, ending in a notch. Length, about $\frac{1}{3}$ inch, diameter, $\frac{1}{5}$ inch. *Hab.* Oahu.

Cerithium laciniosum. Shell conical, rather thick, yellowish white, with a few, irregular, brown spots; whorls six, flattened, depressed in the middle, longitudinally plicate, transversely striate; aperture ovate; canal short, slightly deflected. Length, $\frac{1}{2}$ inch, diameter, $\frac{1}{5}$ inch. *Hab.* Oahu.

Pleurotoma crassilabrum. Shell short, thick, solid, white, covered with coarse, tortuous ribs, and fine, crowded, transverse, striæ; whorls eight, angular, tuberculated in the middle; spire tapers rapidly above the penultimate whorl, and ends in a sharp tip; aperture narrow, half the length of the shell, striated internally; lip thick; fissure distinct; canal short. Length, $\frac{7}{15}$ inch, diameter, $\frac{1}{5}$ inch. *Hab.* Oahu.

Pleurotoma rugosa. Shell thick, solid, covered with coarse ribs, and rather coarse transverse striæ; whorls seven, convex; suture accompanied with a purple line on a straw-colored ground; aperture narrow, striated internally; lip thick; fissure well marked; canal very short. Length, $\frac{4}{15}$ inch, diameter, $\frac{2}{15}$ inch. *Hab.* Oahu.

Pleurotoma acuminata. Shell small, wax colored, with tortuous ribs; whorls seven, slightly convex; spire rapidly tapering, ending in a sharp point; aperture one third the length of the shell, smooth internally; lip thin; fissure deep; canal very short. Length, $\frac{3}{10}$ inch, diameter, $\frac{2}{15}$ inch. *Hab.* Oahu.

Pleurotoma coronata. Shell thick, solid, white, shining, with strong ribs, ending at the suture in projecting points, transverse striæ microscopic; whorls four, flattened, angular; aperture half the length of the shell, unarmed; lip thickened; fissure well marked; canal short. Length, $\frac{9}{25}$ inch, diameter, $\frac{3}{20}$ inch. *Hab.* Oahu.

Pleurotoma micans. Shell small, white, pellucid, smooth and glistening, with obscure brown spots; whorls six, convex; aperture half the length of the shell; lip acute; fissure superficial; canal short. Length, $\frac{4}{15}$ inch, diameter, $\frac{1}{10}$ inch. *Hab.* Oahu.

Pleurotoma pumila. Shell small, purple, surface granulated; whorls four, convex; aperture narrow, one third the length of the shell; right lip thickened, with four or five small teeth projecting inwardly; fissure well marked; canal very short. Length, $\frac{7}{40}$ inch, diameter, $\frac{3}{40}$ inch. *Hab.* Oahu.

Pleurotoma sinuosa. Shell short, thick, tumid, yellowish,

surface granulated; whorls six, rather angular; suture deep; aperture striated internally; lip thickened; fissure well marked; canal somewhat elongated, slightly tortuous, giving the shell a slight gibbous appearance. Length, $\frac{1}{5}$ inch, diameter, $\frac{2}{15}$ inch. *Hab.* Oahu.

Pleurotoma todilla. Shell small, surface granulated, dull white, with microscopic, brown spots; whorls six, convex; apex obtuse; aperture narrow, less than half the length of the shell, striated internally; lip thickened; fissure superficial; canal short. Length, $\frac{4}{15}$ inch, diameter, $\frac{1}{5}$ inch. *Hab.* Oahu.

Pleurotoma circumsecta. Shell small, reddish brown, adorned with rounded, slightly tortuous, longitudinal ribs; whorls five, tumid in the middle; suture well impressed, with a contiguous impressed line; aperture rather wide, unarmed, one third the length of the shell; lip sharp; fissure well marked. Length, $\frac{7}{30}$ inch, diameter, $\frac{3}{35}$ inch. *Hab.* Oahu.

Pleurotoma obnubila. Shell small, whitish, with elongated brown spots, surface smooth, with a few transverse striæ on the extremity of the last whorl; whorls six, flattened; aperture one third the length of the shell; lip slightly thickened; fissure superficial; canal short. Length $\frac{9}{40}$ inch, diameter, $\frac{3}{35}$ inch. *Hab.* Oahu.

Triton lacunatum. Shell small, short, thick, yellowish ash color, with coarse longitudinal and transverse raised lines, and varices extending on both sides from the apex to the base; whorls seven, convex; suture impressed; aperture oval, stained with purple, with purple lines extending into the depth of the shell, and armed with a series of teeth just within the margin of the right lip; canal short, narrow, deflected. Length, $\frac{2}{5}$ inch, longest diameter, $\frac{3}{10}$ inch. *Hab.* Oahu.

Cypræa semiplota. Shell ovate, ventricose, short, thick, smooth, light brown, with numerous, obscure white spots; base tumid, white; aperture yellowish, narrow. Length, $\frac{2}{5}$ inch, breadth, $\frac{3}{10}$ inch. *Hab.* Oahu.

Cypræa insecta. Shell elongate-oval, subrostrate, white, striated transversely, striæ extending into the aperture, with a longitudinal, dorsal impression; aperture white, narrow. Length, $\frac{7}{30}$ inch, breadth, $\frac{2}{15}$ inch. *Hab.* Oahu.

Cypræa sphærula. Shell very small, globular, white, with an impressed dorsal line, and numerous transverse, impressed lines

extending into the aperture ; base very convex ; aperture white. Length, $\frac{1}{10}$ inch, breadth, equal to the length. *Hab.* Oahu.

Cyp. unifasciata. Shell oblong-ovate, subrostrate, smooth, glossy, light slate color, with a broad, interrupted band of a dark brown color passing over the middle of the shell ; aperture rather narrow, white, with a fine purple stain at the extremities. Length, nearly $\frac{1}{2}$ inch, breadth, $\frac{1}{4}$ inch. *Hab.* Oahu.

Cypræa spadix. Shell elongate-ovate, rostrate, smooth, polished, brown or bay color ; base convex, white ; aperture narrow, yellowish, especially at the extremities. Length, $\frac{2}{5}$ inch, breadth, $\frac{1}{5}$ inch. *Hab.* Oahu.

Mr. Binney stated that Dr. Gould, a few other gentlemen and himself, had engaged Mr. John Bartlett, a person well qualified for the task, to make a zoological exploration of the extreme southern part of the peninsula of Florida, with a view of ascertaining its productions in reference to the geographical distribution of both terrestrial and marine species. Mr. Bartlett's first remittances had arrived. Mr. Binney had examined the land shells ; they are such as to confirm fully the supposition formerly advanced by him that, in respect of the terrestrial mollusks, the southern district of Florida is distinguished from the other districts of the United States, and approximates in zoological character to the Antilles, which it approaches so nearly, geographically. Of seven genera, two, *Cyclostoma* and *Siphonostoma* are common to it and the Antilles, and the species of these genera are probably the same that have been already noticed in Cuba. There are several forms of *Bulimus* and *Pupa* peculiar to this district, the Antilles, and the more southern coasts of the Gulf of Mexico, and one form of *Helix* common to it and the island of St. Croix. Of twenty-four species, at least one half are common also to the island of Cuba. Mr. Binney proposed to give a more particular account of these mollusks hereafter.

Dr. C. T. Jackson made some remarks upon Prof. W. R. Johnson's Report on American coals. He explained the processes employed by Prof. Johnson in his various experi-

ments, all which he considered ingenious and well adapted to the purpose. The Report was pronounced to be the result of an elaborate and thorough examination of the subject, and to present facts of great importance, in determining the economical value of American Coals.

Mr. Blake presented for the cabinet some curious globular masses of Quartz, concerning which he made the following remarks: —

On a plain situated in the valley of *Quilca*, in South Peru, near the city of *Arequipa*, and about thirty-four miles from the coast, are to be found, scattered over the surface and imbedded in the loose soil, a vast number of quartz balls like the one exhibited, varying in size from one inch to four inches in diameter. The exterior is dark reddish brown, and presents a rough surface showing no marks of abrasion. When broken they are found to be pure white quartz. The structure is crystalline in all of them, while in some the crystals are well defined with slight interstices between them, and a few have been found hollow, the central cavities being lined with crystals.

So remarkably similar, and so nearly globular are these balls that many of the inhabitants of the country believe them to be the work of art, and ascribe their origin to the ancient Peruvians, a supposition the absurdity of which is evident on the slightest inspection. The plain over which they lie scattered is made up of the debris of the neighboring mountains; — the lofty porphyritic peaks of the Andes flanked by sand-stone and gypsum.

Dr. Gould read a paper, containing descriptions of species of land shells, from the Sandwich Islands, supposed to be hitherto undescribed.

ACHATINA ADUSTA. Testâ turritâ, apice pyramidatâ, imperforatâ, solidâ, fusco-nigricante, sursum pallescente; anfr. 7 convexis, leviter striatis, ultimo subcarinato; aperturâ ovali, intus opalinâ, labro simplici, acuto, nigro; columellâ eburneâ, anticè in dentem productâ. Long. $1\frac{1}{2}$, lat. $\frac{3}{5}$ poll.

A singular shell, partaking of the characters of both *Achatina* and *Achatinella*. Occasionally, instead of being totally black, there are bands of yellow.

STOMATELLA CONCINNA. Testâ parvulâ, auriformi, tenui, striis

regularibus, rosaceo catenatim pictis, cinctâ ; labio posticè disjuncto, revoluto ; columellâ obsoletè perforata ; intus rosaceâ, nitidâ ; anfr. tres. Long. $\frac{1}{5}$, lat. $\frac{3}{20}$ poll.

A minute and very beautiful species, which cannot be confounded with any other.

Trochus verruca. Testâ parvâ, solidâ, globoso-conicâ, nitidâ plus minusve rosaceâ : anfr. 6 rotundatis, ultimo costulis volventibus 12 subequalibus, maculis saturatioribus catenatim signatis cincto ; aperturâ circulari ; columellâ planulatâ, anticè subproductâ : umbilico parvo. Long. $\frac{1}{5}$, lat. $\frac{1}{5}$ poll.

Its specific name suggests its general appearance.

Trochus (Monodonta) gemmatus. Testâ parvâ, conico-globosâ, rubellâ vel cinerascente : anfr. 4 rotundatis, ultimo costulis ad 10, e granulis nitidis interdum radiatim saturatioribus compositis, cincto : suturâ canaliculatâ : umbilico expanso, canali et carinâ circumdato ; aperturâ rotundatâ, basi plicatâ, ringente, labro costulis crenulato, intus sulcato. Long. $\frac{1}{4}$, lat. $\frac{1}{5}$ poll.

Columbella palumbina. Testâ ovato-turbinatâ, nitidâ, albidâ, ferrugineo marmorata, et transversè lineatâ ; aperturâ ringente ; labro inflexo, denticulato ; columellâ biplicatâ, granulosâ, interdum rosaceo tinctâ. Long. $\frac{2}{5}$, lat. $\frac{3}{10}$ poll.

Like *turturina*, but much smaller, and having, instead of revolving striæ, regular revolving lines, always developed near the lip, and passing more or less backward.

Cypræa gemmula. Testâ parvâ, ovato-globosâ, nitidâ, costulis numerosis interdum divaricantibus, undique elegantissimè rugosâ : dorso minimè sulcato : colore rubidâ, dorso utrinque maculis duabus rosaceis ferè confluentibus, lateribus rosaceo asperso : subtus albâ, apicibus rosaceo tinctis. Long. $\frac{1}{5}$, lat. $\frac{3}{20}$ poll.

Allied to C. *tremeza*, *Duclos*.

Achatinella radiata. Testâ solidâ, ovato-conicâ, lineolis castaneis, flavidis et albidis longitudinaliter pictâ, interdum fasciâ mediani vel basali albâ ; anfr. 6 convexis ; suturâ marginatâ, albidâ ; aperturâ ovatâ, peristomate reflexo, flavido ; plicâ latâ ; umbilicatâ. Long, $\frac{3}{4}$, lat. $\frac{9}{20}$ poll.

In size and marking somewhat resembles *Bulimus radiatus*, but the lines are finer and more numerous.

Achatinella rubens. Testâ elongato-ovatâ, crassâ, stra-

mineâ, apice castaneâ, anticè erubescente: anfr. 6 convexis, suturâ impressâ, epidermide fusco hic et illic obtectis; aperturâ ovatâ, labro simplici intus incrassato, rosaceo, fauce albâ, plica tenui; imperforatâ. Long. $\frac{3}{4}$, lat. $\frac{2}{5}$ poll.

A plain species, but well marked by its colors, especially by that of the aperture.

Achatinella nucleola. Testâ solidâ. imperforatâ, ovato-globosâ, livido-castaneâ, apice pallidâ, ad suturam et anticè albidâ: anfr. 6, posticè subtabulatis: aperturâ rotundatâ, labro simplici; columellâ excavatâ, callo obtecto: plica parvâ. Long. $\frac{9}{20}$, lat. $\frac{1}{4}$ poll.

A small, solid species, of a livid hue, whitish at tip and the neighborhood of the suture, and milk white just before the termination of the whorl at the aperture.

Achatinella microstoma. Testâ ovatâ imperforatâ, solidâ, epidermide fusco-virescente: anfr. 6, ultimo ventricoso; aperturâ parvâ, ovato-rotundatâ, fauce livida; labro simplici, intus incrassato; columellâ profundè sinuosâ, callo crasso obtectâ; plicâ validâ. Long. $\frac{3}{5}$, lat. $\frac{7}{20}$ poll.

Distinguished by its ovate form, dusky green exterior, and small, strongly fortified aperture.

Achatinella fuliginosa. Testâ imperforata, ventricoso-ovatâ, apice acutâ, tenui, pallidè virescente, epidermide nigricante indutâ; anfr. 6, supra sub-tabulatis, striis incrementi, et striis volventibus inequalibus decussatis: aperturâ parvâ, semilunari; labro simplici, intus incrassato, fauce cærulescente; plicâ acutâ. Long. $\frac{7}{10}$, lat. $\frac{2}{5}$ poll.

Its ventricose form, coarse revolving striæ and blackish epidermis, distinguish it.

Achatinella striatula. Testâ parvâ, ovato-elongatâ, nitidâ, viridi, longitudinaliter concinnè et creberrimè striato-costatâ: anfr. 7 convexis, ultimo partem dimidiam spiræ æquante; aperturâ angustâ, semilunari; labro albido, incrassato. Long. $\frac{7}{20}$, lat. $\frac{3}{20}$ poll.

Not unlike *Bulimus obscurus* in general appearance. Distinguished from several similar species, by its more slender form and by its beautifully barred surface.

February 5, 1845.

Dr. A. A. Gould in the Chair.

Dr. Gould read extracts from a letter from Mr. James Hall, Geologist of New York, making corrections in the report of his remarks at the meeting of the Society on the 21st February last, published in the Proceedings, page 173. The knob of Serpentine in the neighborhood of Syracuse, N. Y. was stated to have been first noticed by Professor Vanuxem, and not as there reported, by Mr. Hall himself.

A letter was read, addressed to the President of the Society, by John J. Dixwell, Esq. executor, giving notice that by the last will and testament of the late John Parker, Esq. a bequest of two thousand dollars had been made to the Society, which sum the executors were ready to pay to such person as the Society might authorize to receive it in its behalf. The following votes were then passed:

Voted, That the Society will accept the legacy of two thousand dollars bequeathed to it by the late John Parker, Esq.

Voted, That the President be authorized to receive from the executors the amount of the legacy bequeathed to this Society by said will, and to execute to said executors, in the name and behalf of this society, a receipt or other instrument in full discharge and satisfaction of the same.

Voted, That the Secretary be requested to communicate to the representatives of Mr. Parker the high sense which this Society entertains of the honorable motives which dictated the bequest, and their grateful acknowledgment of the liberal aid thus rendered to the Society, and to the cause of science.

Voted, That the President be directed to pay over the amount of said legacy to John J. Dixwell, Esq. Treasurer of this Society, to be by him permanently invested in such securities as he may think proper, with the concurrence of

the Financial Committee, in the name of "The Boston Society of Natural History."

The Chairman announced the donation of about fifty volumes of books, mostly relating to Natural History, which had been received since the last meeting, from Dr. Francis Boott, of London. It was then

Voted, That the Recording Secretary be requested to express to Dr. Boott the thanks of the Society for this valuable addition to its library; and also that the fact of the donation be announced in the public papers.

The Treasurer called the attention of the Society to the state of its finances. It appeared that for several years past, the annual contributions from members, on which the Society relies for the means of paying its current expenses, had fallen off by the secession of many who had formerly been members. It was proposed that an earnest effort should be made to add one hundred new members to the Society; and it was voted to refer the subject to the President, and Messrs. Bulfinch and Bouvé.

ADDITIONS TO THE LIBRARY.

Professor Emmons's Report on the Taconic System of New York. From the *Author*.

Quarterly Journal of Agriculture, conducted by Prof. Emmons and A. Prince. From the *Editors*.

DR. FRANCIS BOOTT'S DONATION.

Lamarck. Histoire Naturelle des Animaux sans vertèbres. 5 vols. 8vo. Paris, 1815.

Linnæi Fauna Suecica. 8vo. Ludg. Bat. 1746.

Latreille. Genera Crustaceorum et Insectorum. 4 vols. in 2. 8vo. Paris, 1607.

Smith, J. E. Introduction to Botany, with Notes, by Dr. J. Bigelow. 8vo. Boston, 1814.

Samouelle, G. Entomologist's Companion. 8vo. London, 1819.

Berkenhout, J. Synopsis of the Natural History of Great Britain and Ireland. 2 vols. 12mo. London, 1795.

Buchoz, I. P. Histoire des Insectes. 2 vols. 12mo. Paris, 1809.

Linnæi, C. Hortus Upsalensis. 8vo. Vol. I. Stockholmiæ, 1748.

Cleveland, P. Elementary Treatise on Mineralogy and Geology. 8vo. Boston, 1816.

Kirby, W. and Spence, W. Introduction to Entomology. 2 vols. 8vo. London, 1816.

Swartz, Olof. Methodus Muscorum Illust. 4to pamph. Upsaliæ, 1781.

Clarke, E. D. Gas Blow Pipe. 8vo. London, 1819.

Rennie, R. Essay on the Natural History and Origin of Peat. 8vo. pamph.

L'Abbé Dubois, &c. Rapport fait sur les divers Concours pour la culture des Pommes de Terre, &c. 8vo. pamph. Paris, 1818.

Richard, L. C. Analyse des Fruits. 12mo. pamph. Paris, 1808.

Catalogue of Plants in the Botanic Garden at Liverpool. 8vo. Liverpool, 1808.

Launy, L. de. Minéralogie des Anciens. 2 vols. 8vo. Bruxélles, 1803.

Bartram, W. Travels in North America. 2d ed. 8vo. London, 1794.

Henderson, E. Iceland; or Journal of a residence in that Island. 2 vols. 8vo. Edinburgh, 1818.

Hooker, W. J. and Taylor, T. Muscologia Britannica. 8vo. London, 1818.

Barrow, J. Voyages into the Arctic Regions. 8vo. London, 1818.

Reaumur. Memoires pour sérvir à l'Histoire des Insectes. 6 vols. 4to. Paris, 1734.

Levaillant, F. Voyage en Afrique. 3 vols. 4to. Paris, 1783–1785.

Sparrman, A. Voyage to the Cape of Good Hope. 2 vols. 4to. London, 1781.

Bauhini, C. Pinax Theatri Botanici. 4to. Basileæ, 1671.

Evelyn, J. Sylva, or a Discourse on Forest Trees, &c. Long 4th. London, 1689.

Whitehurst, J. Original state and formation of the Earth. 4to. London, 1792.

Petro Pena et M. de Lobel, Medicis. Accessio ad priscorum præsertim Dioscoridis, et recentiorum Materiam Medicam. Long 4to. Antverpiæ, 1576.

M. de Lobel. Insulani Plantarum seu Stirpium Historia. Long 4to. Antverp. 1576.

Malpighi, M. Opera Omnia. Folio. Londini, 1687.

Dillenius, J. J. Historia Muscorum. 4to, Oxonii, 1741. Iterum Edinburgi, 1811.

Barrelienus, A. P. J. Plantæ per Galliam, &c. observatæ. Fol. Parisiis, 1714.

February 19, 1845.

Regular meeting of the Society—Dr. C. T. Jackson, Vice President, in the Chair.

Dr. Binney presented a paper from Dr. James Deane, of Greenfield, Mass. entitled "Illustrations of Fossil Footmarks." It was accompanied by a reduced fac simile drawing of a slab about six feet in diameter, containing upwards of one hundred perfect tracks, being completely intersected by rows of the tracks of four or five varieties of gregarious birds, said to be by far the most interesting specimen, both in point of the number and perfection of the impressions, yet discovered. The paper was referred to the Committee of Publication.

Dr. Binney also announced the reception of a cast of a very perfect *Ornithichinites giganteus*, from Mr. Marsh, of Greenfield.

Mr. Bouvé exhibited a collection of Fossils from the Tertiary of Claiborne, Alabama, and a few from Prairie Bluff, presented by Mr. C. S. Hale, of Mobile. The collection is a very

valuable one, both in regard to the number and perfection of the specimens.

The thanks of the Society were voted to Messrs. Marsh and Hale. Dr. Bacon reported on a mass of copper ore from Lake Superior. It was chrysocolla, and contained about 30 per cent. of metallic copper.

Dr. C. T. Jackson reported upon "Forbes's Travels in the Alps." He gave a sketch of his theory of the movement of glaciers, as deduced from his observations and measurements. Mr. Whitney offered some objections to the theory, and the work was recommitted to him, with a request that he would communicate to the Society his own observations, made during the last year.

Dr. Gould read a communication from Professor J. W. Bailey, of West Point, entitled "Notes on the Infusoria of the Mississippi river."

"A bottle full of water was recently placed in my hands, which had been collected about a month before, from the Mississippi river, at St. Louis, by Lieut. L. H. Allen, of the United States army, who brought it away as a specimen of the water ordinarily used at that city, for drinking. Having long supposed that the waters of the Missouri must at times be loaded with great quantities of the minute fossil Polythalamia, which are so abundant in the cretaceous marls of a portion of the river which it traverses, I was led to seek for them in the sediment from the water from St. Louis, as at this place the turbid waters of the Missouri still impress their own character upon the Mississippi.

It is still my belief, that during the season of floods, these fossils may be detected in the sediment of the Missouri, although on this occasion I failed to find any trace of these animalcules of former days. The amount, however, of microscopic beings of the present epoch which I found in this water was truly surprising; and as the bottle had been carefully corked when the waters were collected, and had not been opened until its arrival at West Point, whatever organisms it contained undoubtedly belonged to species inhabiting the Mississippi. The number of individuals had doubtless increased by reproduction; but no spe-

cies could have been introduced from the time it was first collected up to the time of its examination by me. This is confirmed by the fact, that several of the species are entirely different from any occurring in the eastern portions of the United States.

Having thus unexpectedly an opportunity to study the recent animalcules of so interesting a locality, I examined them carefully; and I now offer the following results of my observations as a slight contribution to the knowledge of the geographical distribution of Infusoria:

1st. The water of the Mississippi, at St. Louis, abounds in soft, as well as siliceous-shelled Infusoria.

2d. The species observed by me, as far as I could identify them with species described by Ehrenberg, were the following, namely:

Arthrodesmus acutus,
" quadricaudatus,
Chætonotus larus,
Coleps hirtus,
Euglena triquetra?
Eunotia westermanni,
Fragillaria constricta,
" rhabdosoma,
Furcularia gibba,
Gallionella distans,
Micrasterias boryana,
" elliptica,
" tricycla,
Navicula amphirhyncus,
" sigma.
Oxytricha ——— ?
Rotifera vulgaris,
Stylonichia ——— ?
Surirella campylodiscus,
Synedra ulna.

3d. All these were observed by me in a living state, and most of them were in great abundance, and from their activity as well as other characters they appeared to have suffered no injury from transportation.

4th. The remarkable Surirella campylodiscus which abounds in the water from St. Louis, has not before been found in the United States, but is mentioned by Ehrenberg (Verbreitung, &c., p. 100,) as a Mexican species.

5th. No traces of any Phytolitharia were seen; neither was the cosmopolite species Pinnularia viridis detected.

6th. The inhabitants of St. Louis consider the water which they drink as remarkably wholesome, and are surprised that strangers wish to have it filtered for their use. Whatever its effect on health may be, it is certain that it contains a sufficient amount of animal matter to be somewhat nutritious.

7th. These observations prove that the waters of the Mississippi, like those of the Nile, are crowded with organic life, and to this, as Ehrenberg has proved, with regard to the Nile, is probably due, in no small degree, the fertilizing power of its sediment.

8th. The minute indestructible shells of the fluviatile siliceous infusoria, must be borne to immense distances by the powerful current of the Mississippi, and it is even probable that they may be carried into the Gulf of Mexico, to be there deposited, in company with recent marine species.

DONATIONS TO THE CABINET.

A bottle containiug fishes and reptiles. From *G. W. Collamore.*

ADDITIONS TO THE LIBRARY.

Proceedings of the Zoological Society of London. 8vo. pamph. Nos. 120 to 134. For 1843 and 1844. From the *Zoological Society.*

Reports of the Council and Auditors of the Zoological Society of London. 8vo. pamph. 1844. From the *same.*

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. ii. No. 6, for Nov. and Dec. 1844. From the *Academy.*

March 5, 1845.

C. T. Jackson, Vice President, in the Chair.

Mr. Bouvé read a notice of the Final Report upon the Geological Survey of the State of New Hampshire by Charles T. Jackson, M. D.

Dr. Cabot placed upon the table mounted specimens of birds from Dr. Cragin's collection, among them *Cacicus hæmorrhous* and *Cacicus icteronotus.*

Mr. Richards mentioned certain experiments made by him on heated tar. He had plunged his hand into tar at the temperature of 194° Fahrenheit, and had held it in that situation, for several seconds, without a painful sensation of heat. He stated, on the authority of others, that the same result had followed when the tar was heated to 212°. He asked an explanation of the fact. Dr. C. T. Jackson suggested that the low conducting power of the tar might be the cause, and proposed that a series of observations should be made to ascertain the relative power of tar, as compared with water, for conducting caloric.

John B. Walker, M. D., Mr. William A. Parker, and Mr. Franklin Darracott, were elected members.

DONATIONS TO THE CABINET.

Muscicapa coronata, from Yucatan, male and female. By *Dr. Cabot.*

Skeleton of a box tortoise.

Palate and pharyngeal bones of a parrot-fish.

A bird called by the natives Devil-Bird, from its note which is thought by them to be of ill omen. All from the Cape de Verd Islands. By *Dr. C. J. Bates.*

ADDITIONS TO THE LIBRARY.

Conrad, T. A. Fossils of the Miocene Formation of the United States. 8vo. pamph. From the *Author.*

Gray, G. R., Genera of Birds, No. 10. 4to. London, 1845. *Audubon Fund.*

Gould, John. Monograph of the Odontophorinæ, or Partridges of the United States, No. 1. Folio. London, 1845. *Audubon Fund.*

March 19, 1845.

Charles T. Jackson, Vice President, in the Chair.

Dr. A. A. Gould read descriptions of shells collected by Dr. Charles J. Bates, Assistant Surgeon U. S. Navy, on the coast of Liberia.

Pholas branchiata. Testa oviformi, clausâ, posticè acuminatâ, areolis tribus triangularibus partitâ: areolâ anticâ plicis numerosis concentricis serratis: mediali transversè subtiliter striatâ: posticâ lamellis corneis flexilibus imbricatis instructâ: dorso scutis tribus obtecto, unico magno umbonali, orbiculari; duobus marginalibus lanceolatis, duobus quoque ventralibus; apophysi exili, flexuoso-falciformi. Long. $1\frac{1}{5}$; lat. $\frac{13}{20}$; poll.

Psammobia figlina. T. crassâ, sub-ovali, sub-equilaterali, rufo-cinereâ; anticè rotundatâ; posticè hiante, sub-rostratâ, valdè flexuosâ, apice emarginatâ; valvis concentricè laminoso-striatis, radiatim lineolatis; natibus elevatis, attigentibus; dentibus cardinalibus divaricatis; intus albâ, punctis numerosis indentatâ. Long. $3\frac{1}{5}$; alt. $2\frac{1}{5}$; lat. $1\frac{2}{5}$ poll.

Tellina rubicunda. T. tenui, transversâ, inequivalvi, natibus postmedianis, anticè semi-ellipticâ, posticè triangulari, flexuosâ, apice truncatâ, concentricè et radiatim minutissimè striatâ; valvâ dextrâ planulatâ, posticè areolam triangularem lamellosam habente; valvâ sinistrâ convexâ; colore dilutè rosaceâ, albo radiatâ. Long. 1; alt. $\frac{3}{5}$; lat. $\frac{1}{5}$ poll.

Resembles T. *donacina* in shape and coloring, but is larger, and is also distinguished by the triangular area of coarser sculpture on the right valve.

Nucula bicuspidata. T. albâ, transversè elongato-ovatâ, sub-cylindricâ, anticè rotundatâ et triplicatâ, posticè productâ, tricarinatâ, bicuspidatâ; valvis obliquè concinnè striatis, præter spatio excavato inter carinas serratas; cardine dentibus anticis ad 12, posticis ad 26. Long. $\frac{3}{5}$; alt. $\frac{1}{4}$ poll.

Nassa turbinea. Testâ solidâ, ovatâ, apice productâ, albidâ; anfr. 9 sub-tabulatis, plicis numerosis acutis et striis volventibus profundis ad 13 decussatis; basi spiraliter striata; aperturâ parvâ, strictâ, angulato-ovali; labio acuto, crenulato, intus sulcato; callo columellari erecto, granulato. Long. $\frac{9}{10}$; lat. $\frac{1}{2}$ poll.

Nassa elata. T. elongato-conicâ, cinereo-albidâ ; anfr. 8 tabulatis, marginatis, posterioribus plicatis, penultimo glabro, ultimo anticè striato ; aperturâ angustâ, ovali, albâ ; labro acuto, anticè crenulato, intus striato. Long. $\frac{13}{20}$; lat. $\frac{3}{10}$ poll.

Helix hepatizon. Testâ depresso-conicâ, crassâ, rubro-castaneâ, canescente, sub-perforatâ ; anfr. $5\frac{1}{2}$ convexis, striis incrementalibus et striis volventibus argutè reticulatis ; suturâ impressâ ; aperturâ semicirculari, contractâ, peristomate incrassatâ, intus cerasinâ. Lat, $1\frac{3}{10}$; alt. $\frac{4}{5}$ poll.

Found near the mouth of the Gaboon river.

James Deane, M. D., of Greenfield, Mass. ; C. B. Adams, M. D., of Middlebury, Vt., were elected corresponding members.

DONATIONS TO THE CABINET.

Mounted specimens of *Hirundo serripennis* and *fulva*, *Troglodytes bewickii*, *Trichas philadelphia*, *Fringilla lincolni*. By *exchange*.

A specimen of petrified wood. From *Dr. S. P. Kirtland*, of Ohio.

ADDITIONS TO THE LIBRARY.

Audubon and Bachman. Quadrupeds of America. Plates 46 to 50. Folio. *Subscribers*.

Gray, G. R. Genera of Birds, No. 11. 4to. London, 1845. *Audubon Fund*.

April 3, 1845.

Mr. Binney, President, in the Chair.

Dr. Wyman exhibited the shell of *Kinixis homeana*, Bell, from Cape de Verd Islands, presented by Dr. Bates. Dr. W. remarked that Mr. Bell described this species as a native of West Africa, while Dumeril and Bibron, probably incorrectly, speak of it as belonging to South America.

Dr. Storer exhibited numerous drawings of fishes, made

by Dr. C. J. Bates, U. S. N., and presented by him to the Society. They were drawn chiefly from specimens observed by him on the west coast of Africa. Dr. Storer remarked that the drawings and accompanying descriptions, though not the results of the labor of a professed naturalist, were quite sufficient to give a clear idea of the objects described. They showed, too, that any careful and intelligent person may, by close attention and perseverance, render essential services to Natural History, especially when possessing a facility for drawing. From cursory examination, it appeared probable that there were among them several new and interesting forms.

Letters from Dr. G. A. Perkins, of Liberia, corresponding member; George Brown, U. S. Commissioner at the Sandwich Islands; and Mr. George Ditson, of Cuba; respectively, announcing donations, were read.

Dr. Bacon remarked upon a specimen of petrified wood, recently presented by Dr. Kirtland, that, its character having been doubted, he had examined longitudinal and horizontal sections with a microscope, and had ascertained conclusively that it is a portion of a true fossil tree belonging to the natural family of palms.

D. S. Smalley, of Jamaica Plain; Waldo Higginson, of Boston; Asa B. Snow, M. D.; Dr. Daniel D. Slade, Cambridge, were elected members.

Walter Channing, M. D., Samuel Wigglesworth, M. D., former members, were, at their request, restored.

DONATIONS TO THE CABINET.

A box of shells. From *Dr. G. A. Perkins*, of the Liberia mission.

A box of shells, and another of minerals. From *George Brown*, U. S. Commissioner, Sandwich Islands.

Specimens of minerals. From *George Ditson*, Cuba.

ADDITIONS TO THE LIBRARY.

Delessert Benj. Musée Botanique. 8vo. Paris, 1845. From the *Author*.

Navigantium et Itinerantium Bibliotheca. Folio. From *George Brown, Esq.*

Proceedings of the American Philosophical Society. No. 21 and 24. 1842. From the *Society.*

April 16, 1845.

D. H. Storer, Vice President, in the Chair.

Dr. Wyman placed upon the table a specimen of the mole-cricket, *Gryllotalpa vulgaris*, taken by him in Virginia. This species takes its name from its habit of burrowing in the earth, for which purpose its first pair of legs is modified in form, presenting a striking analogy to those of the mole. He exhibited this structure in detail. Dr. Wyman also exhibited specimens of the blue-bottle fly, in the different stages of development.

A letter from Dr. Kirtland was read.

Caleb Reed, and F. S. Ainsworth, were elected members.

ADDITIONS TO THE LIBRARY.

American Journal of Science. Vol. xlviii. No. 2. From the *Editors.*

Gray, G. R. Genera of Birds. 4to. No. 12. *Audubon Fund.*

May 7, 1845.

Annual Meeting.

Amos Binney, the President, in the Chair.

The Secretary read the record of the last annual meeting.

The President, then, addressed the Society, reviewing its progress for the past year, and giving a statement of its con-

dition and prospects. He enforced the necessity of more ample accommodations for the museum, and recommended that an appeal should be made to the liberality of the public, with a view to raise the sum of $30,000. In aid of such an appeal, he gave a short history of the Society, showing how much it had accomplished, how great its influence had been on the cultivation of the Natural Sciences in New England, the extent of its necessities, and the nature of its claims on the friends of learning in the city and State. This address, having been printed in a separate form, is omitted here.

Professor Charles Brooks, then read a discourse on the History of Philosophical Zoology, from the earliest times to the present day.

The Reports of the Curators and Librarian were then read, showing a respectable increase in every department of the museum and in the library.

The Report of the Treasurer exhibited the financial condition of the Society as follows:

Amount of investment for permanent fund, .	$12,000
Cash on hand, ...	428 88
Total, ...	$12,428 88
The amount of admission fees and annual assessments, received during the year, is, .	456
The amount of ordinary expenses is, . .	598 88
Deficiency supplied from income of permanent fund, ...	142 88
Add deficiency of former years, . . .	327 22
Total amount diverted, from income appropriated to the library and museum, . . .	$470 10

A letter from John J. Dixwell, Treasurer, was read, declining a reëlection, and concluding in the following words:

"I cannot retire from the office which I have held during the past six years, without expressing my warmest thanks for the

indulgence with which my efforts have been received by the Society, and the urbanity which has been extended to me by all its members, nor without offering an earnest prayer that the beautiful science of Nature, exhibiting as it does the Divine love and wisdom of the Creator, may continue to be illustrated by your Society, with renewed zeal and untiring diligence."

On motion of Dr. Charles T. Jackson, it was then

Voted, That we sincerely regret the retirement of Mr. Dixwell from the office which he has so long and so acceptably filled; and that the thanks of the Society be presented to him for the faithful and satisfactory manner in which he has performed the duties of its Treasurer for six years past.

The Society then proceeded to ballot for the choice of officers for the year ensuing, and the following gentlemen were unanimously chosen:

President,
Amos Binney.

Vice Presidents,
Charles T. Jackson, D. Humphreys Storer.

Corresponding Secretary,
Augustus A. Gould.

Recording Secretary,
Thomas Bulfinch.

Treasurer,
Patrick T. Jackson, Jr.

Curators,

J. E. Teschemacher,	*Botany*,
T. William Harris,	*Entomology*,
Jeffries Wyman,	*Ichthyology & Herpetology*,
Martin Gay,	*Mineralogy*,
N. B. Shurtleff,	*Comparative Anatomy*,
Thomas T. Bouvé,	*Geology*,
Samuel Cabot, Jr.,	*Ornithology*,
Edward Tuckerman,	*Conchology*.

Librarian,

Charles K. Dillaway.

Cabinet Keeper.

Henry J. Bigelow.

On motion of Dr. J. V. C. Smith, it was unanimously

Voted, That the thanks of the Society be tendered to Rev. Prof. Brooks, for the learned and interesting address which he has delivered on this occasion.

On motion of Dr. Storer, it was

Voted, That the President be requested to publish, for the use of members and others, and in aid of the effort to raise funds, the address which he has made this day.

Voted, That, in the opinion of the Society, the time has now arrived when a strenuous effort should be made to raise sufficient funds to ensure the prosperity and permanence of the institution.

Voted, That a committee be appointed, to act personally, or through others to be selected by them, to solicit contributions for the purpose of erecting a building for the use of this Society.

The following gentlemen were elected to compose this Committee :

Amos Binney,
Charles T. Jackson,
D. H. Storer,
A. A. Gould,
Charles Brooks,
Benjamin A. Gould.

The Report of the Treasurer, and his accounts to this time, were referred to B. A. Gould and T. J. Whittemore, who, having examined them, reported the accounts to be correctly kept, the expenditure properly vouched, and the balance of cash to correspond with that stated by the Treasurer and held temporarily by the President, viz., $ 428 88.

The President read a letter from the Secretary of the Association of American Geologists and Naturalists, communicating a Report of a Committee of that body, laid before it at its late session at New Haven, on the subject of the nomenclature of Zoölogy, which Report was ordered by a vote of the Association to be submitted to this Society for consideration. It was voted to refer the papers to a committee composed of the following persons: A. A. Gould, Jeffries Wyman, and S. L. Abbott.

June 4, 1845.

C. T. Jackson, Vice President, in the Chair.

Mr. Teschemacher remarked that he had just received, from St. Diego, California, a living specimen of *Melocactus viridescens*, of Nuttall's MSS., communicated to Messrs. Torrey and Gray, and published by them, in their invaluable work on the plants of North America, as an *Echinocactus*. The difference of opinion, between these authors and Mr. Nuttall, as to the generic character of this plant, arose, probably, from the assertion of the latter that the flowers proceeded from the upper clusters of spines; whereas the flowers of *Melocactus* proceed from the woolly head, characteristic of this genus, in which they are usually imbedded. But Nuttall also states that the fruit is smooth. This is a character of *Melocactus*, the fruit of *Echinocactus* being generally more or less scaly from the remains of the sepals. Pfeiffer says, "rarissime lævis."

The specimen was stated to be about 5 inches high, and 9 inches in diameter; the spines radiating, very crowded, and transversely striate, four of them (Nuttall says three) in each fascicle larger than the rest, but the upper and lower spines the largest. The spines somewhat poisonous, and

wounds inflicted by them almost certain to fester. In other respects agreeing with Nuttall's description, but having a woolly head, distinct, though small, and depressed in the centre of the plant.

There were no flowers upon the specimen, but the scars left by them existed. On the scars several seeds remained exactly as may be seen in other *Melocacti*, the fruit of which has dried off. The scars were behind the fascicles of spines, near the axis, and not in the centre of the fascicle as in *Echinocactus*, and from their close proximity to the woolly head, were probably immersed in the edge of it. Nuttall had stated that they are seldom laterally clustered; there were, however, two young plants laterally attached to the specimen.

From these facts Mr. Teschemacher was of opinion that the plant should be restored to the genus *Melocactus* in which Nuttall originally placed it. The native name of the plant is Choyas.

Mr. Teschemacher also exhibited and remarked upon a large collection of ferns and club-mosses, sent to the Society from the Sandwich Islands by George Brown, U. S. Commissioner.

Dr. Gould, in behalf of the Committee to whom was referred the Communication from the Association of American Naturalists and Geologists concerning nomenclature, reported its approval of the code of rules recommended by that body, with some suggestions of amendment. The Committee was directed to communicate their report, with the suggestions, to the Association.

Dr. C. T. Jackson reported upon the copper ores of Cuba presented by Mr. George Ditson.

A letter was read from Prof. Agassiz, of Neufchatel, announcing his intention of visiting this country, and of bringing with him a large collection of fossils, and other specimens of foreign natural history, to exchange for North American productions.

Letters from Ezra Weston and George Ditson, accompanying donations, were also read.

The following gentlemen were elected members: Lemuel Stanwood; Franklin H. Story, Jun.; Henry G. Andrews; George B. Blake; Thomas C. Amory, Jun.; Waldo Flint; George H. Kuhn; and Joseph Hobbins, M. D.

DONATIONS TO THE CABINET.

Large specimen of *Mytilus* from Monterey, California. By *J. E. Teschemacher.*

Numerous bottles of reptiles and other animals, from Surinam. By *Dr. F. W. Cragin*, of Surinam.

An engraved portrait, in a frame, of Sacaze-Gaston, a self-taught botanist, of the department of Basses-Pyrénées, France. By *Ezra Weston.*

June 18, 1845.

The President in the Chair.

Dr. Samuel Cabot, Jun., remarked that among the birds of Surinam lately received from Dr. Cragin, he had noticed,

Himantopus nigrocollis, The black-backed stilt,
Anhinga Carolinensis, The black-bellied darter,

which are also natives of the United States.

He had also recently procured in the market *Scolopax noveboracensis*, the read-breasted snipe, in its winter plumage, in which it very rarely occurs in this region.

Dr. Jeffries Wyman mentioned that among the specimens presented by Dr. Cragin, there were two of monstrosities. He proposed that these should be deposited with the Society for Medical Improvement, whose collection of monstrosities,

exhibited anatomically, he described as surpassing, in extent and value, any of a similar kind in this country, or even in Europe, with the exception of that at Berlin. It was then

Voted, That the specimens be deposited with the Society of Medical Improvement, in the name and as the donation of Dr. Cragin, and that Dr. Cragin be informed of the disposition thus made of them.

Dr. Wyman made some observations upon a specimen of *Simia pithecia* received from Dr. Cragin.

Edward Winslow, Jacob Sleeper, Joseph M. Wightman, Paschal P. Pope, and Samuel Austin, Jun., were elected members of the Society.

ADDITIONS TO THE LIBRARY.

Gray, G. R. Genera of Birds. 4to. Part. xiv. *Audubon Fund.*

Hooker, W. I. Genera Filicum. Parts x, xi, xii. *Courtis Fund.*

Annals and Magazine of Natural History. No. 100. June, 1845. The *same.*

Report of Commmissioner of Patents for 1844. 8vo. Washington, 1845. From *Charles Stodder.*

July 2, 1845.

The President in the Chair.

Dr. D. H. Storer read a description of a hitherto undescribed species of fish, received from Mr. S. C. Clark, of Chicago, with drawings taken from the living fish.

ETHEOSTOMA CÆRULEA. Body oblong. Head slightly gibbous anterior to the eyes, which are prominent. When alive, reddish

above, orange-colored upon the lower portions of the sides, with nine or ten transverse blue bands, which are not perceptible through the red upon the back. Anterior dorsal yellow, margined with blue; posterior dorsal with a longitudinal blue band at its base and margin; ventral, anal and caudal fins, bluish; pectorals light yellow. A blue blotch upon the cheeks.

Rays. D. 10, 13; P. 13; V. 1, 5; A. 9; C. 16.

Length, $2\frac{1}{2}$ inches. Fox River, Illinois.

Dr. Storer, also read descriptions of the following species of fishes, received, together with drawings, from Mr. Charles A. Hentz, of Florence, Alabama.

Leuciscus croceus. Body oblong, convex in front of the dorsal fin. Lateral line straight. Head large. All upper part of body greenish; throat flesh-colored. An indistinct brown band runs through the centre of the sides from the operculum to the base of the tail; at its termination is a small black blotch. Surface covered with a slimy secretion. Fins orange.

Rays. D. 8; P. 14; V. 8; A. 7; C. 19.

Length, $3\frac{1}{2}$ inches. Alabama.

L. prolixus. Body much elongated. Head flattened above. Lateral line descends obliquely to a point above posterior extremity of the pectorals, thence pursues a straight course to the tail. Top of head brown, with numerous minute tubercles; back greenish. Upper part of sides blue with lilac tints, lower part white. Dorsal fin brown, the others yellowish.

D. 9; P. 14; V. 8; A. 9; C. 16.

Length, 4 inches. Alabama.

L. obesus. Body short. Head large. Abdomen convex. Dorsal ridge green; sides yellow, with deep lilac intermixed, so as to appear like a longitudinal band of the latter color; lower part of sides bluish; top of head fuliginous. Pupils black, irides golden. Lateral line assumes the curve of the body.

Length $3\frac{1}{2}$ inches. Florence, Alabama.

L. gibbosus. Body convex above. All upper parts of body green; lower part of sides light lilac. Fins greenish-yellow. Opercles light with lilac tints.

Length, 4 inches. Tuscaloosa, Alabama.

Etheostoma tessellata. Body oblong. Head gibbous, less

than one fourth the length of the body. Lateral line straight. Top of the head and upper portion of the sides, of a greenish-brown color; eight or ten transverse bluish bands upon the sides. The intervals between these bands are yellowish, and in their centres is a bluish rhomb. A black blotch at the base of the tail. The lips, opercles and rays of the first dorsal, gamboge yellow. Caught in running water.

D. 12, 13; P. 13; V. 6; A. 12; C. 17.

Length, 3 inches. Florence, Alabama.

Etheostoma cinerea. Body, oblong, compressed. Head gibbous directly over the eyes. The upper portion of the sides of a light yellow color, crossed longitudinally by three or four cinereous interrupted narrow bands, one or two of which commence at the snout, the others arise back of the head, and are lost anterior to the tail. Beneath these bands, is a series of longitudinally arranged oval blotches, of a similar color, and from these blotches descend, obliquely, backwards and downwards to the abdomen, narrow, cinereous lines. Lower portion of sides yellowish white. First dorsal margined with red; second dorsal and anal variegated with red. Caught in deep, still water.

D. 11, 13; P. 15; V. 6; A. 10; C. 17.

Length, 3 to 4 inches. Florence, Alabama.

A paper, by Dr. J. P. Kirtland, supplementary to his former papers, was read, containing descriptions of the fishes of Ohio, in which the following new species occurred.

Exoglossum dubium. Head somewhat elongated; eyes small, prominent; upper-jaw projects two lines beyond the lower, which is small, semicircular, and mostly concealed by the projection of the upper when the mouth is closed; lips circular, the lower reflected after the manner of the Catostomi, only smaller and less fleshy. Body gibbous on the back, before the dorsal fin cylindrical, slightly compressed on the sides. Abdomen full. Scales small oval. Dorsal and anal fins, trapezoidal; caudal fin bilobed, the upper lobe acuminate, the lower obtuse. Pectoral fin falcate, subovate.

Color. Irides golden yellow, head and back olive, operculum iridescent, sides dusky, abdomen white, fins fulvous.

Length, from 4 to 6 inches. *Hab.* Yellow-Creek, Poland, Trumbull Co., Ohio.

D. 8; C. 20; A. 7; V. 8; P. 14.

Mr. James D. Dana, of New Haven, corresponding member, made some interesting remarks concerning the growth of corals, madrepores, sponges, &c., derived from his own observations during the late exploring expedition. At his request, the Society voted to allow him the use of any specimens in their collection, to aid him in illustrating and perfecting his forthcoming work on the corals and other allied families, with the privilege of removing them to his own residence.

Dr. Storer made some remarks on a specimen of the ray family, *Myliobatis guttata*, a beautifully preserved specimen of which was presented by John Tyler, Jun.

George Heaton, M. D.; George Hayward, Jun., M. D.; Edward Hall, M. D.; Abiel Chandler; S. N. Dickinson, were elected members.

Rev. William Dean, Missionary to China; M. W. Dickeson, M. D., Natchez, Mississippi; B. C. L. Wailes, Washington, Mississippi; Joseph Leidy, M. D., Philadelphia, were elected corresponding members of the Society.

ADDITIONS TO THE LIBRARY.

Audubon and Bachman. Quadrupeds of N. America. Folio. Plates 56 to 60. *Subscribers.*

Von Martius. Systema Materiæ Medicæ Vegetabilis Brasiliensis. 8vo pamph. Lipsiæ, 1843. From *Asa Gray.*

Brisseau de Mirbel. Anatomische und Physiologische Untersuchungen über den Stamm der Dattelpalme. 4to pamph. 1843. From the *same.*

Von Martius, C. F. P. Bericht über das Guano. 8vo pamph. From the *same.*

July 16, 1845.

Mr. Binney, President, in the Chair.

Dr. D. H. Storer read a description of a fish from Alabama river, forwarded, with a drawing, by Charles A. Hentz, Florence, Alabama.

Pæcilia olivacea. Body oblong, head flattened above. All upper portion of the body olive-colored, sprinkled with minute black dots; a light spot on the top of the head; a broad black band, commencing at the angle of the jaws, is continued the whole length of the body to the caudal rays; throat and abdomen white. Fins yellowish green. Caudal rounded, spotted like the upper portion of the body. Caught at all seasons, swimming on the top of the water, catching at floating objects. Commonly called *Top minnow.*

D. 9; P. 13; V. 6; A. 12; C. 19.

Length $2\frac{1}{2}$ inches. Florence, Alabama.

Dr. Storer mentioned that he had recently obtained a specimen of *Prionotus tribulus, Mitch.*, from the waters of Massachusetts Bay. He had never before been able to obtain authentic evidence of the existence of this fish in Massachusetts. The specimen was presented to the Society by the Hon. Daniel Webster, who procured it in an early morning visit to the Boston market, where his accurate knowledge of our fishes enabled him at once to distinguish it as a species he had never before seen. It was taken north of Cape Cod.

Dr. J. B. S. Jackson exhibited a collection of marine objects and fossils, collected by him during a recent visit to Nantucket and Martha's Vineyard.

Dr. Jeffries Wyman stated that, while examining microscopically the structure of *Actinia*, he had noticed, in the extremities of the tentacles, the existence of minute spiculæ, having an elongated form slightly curved, with the extremities rounded. He had found similar spiculæ existing in

nearly all the tissues of the body, especially in the integuments, and in the coats of the stomach. They were diffused through the tissues in the same manner as the spiculæ in sponges and other allied substances.

A paper, by Joseph Leidy, M. D., of Philadelphia, corresponding member, on the Anatomy of *Littorina angulifera*, was read. It was accompanied by drawings, and was referred to the Committee of Publication.

Dr. J. B. S. Jackson stated that, when recently at Nantucket, he had examined, as well as he could, on the spot, the anatomy of several specimens of swell-fish, *Tetraodon turgidus*, and he had reason to suppose, contrary to the opinion of others, that the part of the animal which is inflated, is truly the stomach. The observations, however, were made under unfavorable circumstances, and the result being unexpected, he desired not to commit himself as to this opinion, until he could have an opportunity of a more careful investigation.

August 6, 1845.

Dr. A. A. Gould in the Chair.

Dr. D. H. Storer mentioned that he had received a letter from Prof. J. P. Kirtland, of Cleveland, Ohio, dated July 17, 1845, mentioning some facts which might be interesting to ornithologists. At the date of the letter, flocks of the pine-finch, *Fringilla pinea*, were flying about his garden, and also the Bohemian wax-wing, *Bombycilla garrula*, thirty or forty specimens of which had been taken.

Dr. Storer read a letter from Dr. Richard Parnell, author of a prize essay on the fishes of the Frith of Forth, announcing that he was giving his attention to the fishes of the West Indies.

DONATIONS TO THE MUSEUM.

Fossils from Trenton Falls, New York. By *Dr. S. L. Abbott.*

A Pelican from Bombay. By *William Ballard, Esq.*

Specimen of Menobranchus. By *D. C. Clark*, Chicago.

A large number of nests with eggs. By *Mr. Ogden.*

Skins of *Tyrannula flavi-ventris, minima, fusca, acadica, virens* and *traillii.* From *Prof. S. F. Baird*, Carlisle, Penn.

Skin of *Picus varius.* By *Moses Kimball.*

Skin of *Arctomys monax.* By *Mr. Ogden.*

August 20, 1845.

D. H. Storer, Vice President, in the Chair.

Dr. A. A. Gould read descriptions of recent shells collected by Mr. John Bartlett in the everglades of Florida.

UNIO PALUDICOLUS. Testâ transversâ, ovato-rhomboideâ inequilaterali, anticè rotundatâ ; margine ligamentali arcuatâ ; natibus prominulis, erosis ; epidermide rufo-castaneâ ; dentibus cardinalibus obliquis, pyramidatis ; lateralibus lentè arcuatis ; margarita cupreo-coruscante. Long. $1\frac{3}{5}$; alt. $\frac{9}{10}$ poll.

In shape and size closely resembles *U. heterodon.*

UNIO PAPYRACEUS Testâ fragili, valdè inequilaterali, transversè ovato-oblongatâ, sub-cylindraceâ ; posticè subrostratâ, supra angulatâ ; natibus parvis, eleganter undulatis ; epidermide levigatâ, luteo-castaneâ, radiatim lineolatâ ; cardine invalido ; dente cardinali longitudinali, compressâ ; laterali tenui, rectâ ; margaritâ argenteâ. Long. $1\frac{4}{5}$; lat. $\frac{7}{10}$; alt. 1 poll.

In shape, delicacy, and even its color, it is not unlike *Anod. couperiana*, Lea.

Dr. J. B. S. Jackson made some remarks upon the skeleton of a whale recently exhibited in this city, and compared it with the *Rorqual du Cap* of Cuvier. The individual was taken off the coast of Maine, last July, and the skeleton was prepared and set up with much labor and expense, though by persons totally unacquainted with anatomy.

The whole length of the skeleton was said to be 40 feet, and the number of vertebræ was 51, the terminal one having perhaps been lost. The cervical vertebræ were all separate, and so they are in the *Rorqual du Cap*, excepting a fusion of the upper part of the wings of the second and third. This fusion may have originally existed, and the evidence been apparent in the present specimen; but Dr. Jackson not being aware of the observation, at the time, in respect of the rorqual, had not given his attention to this point in the skeleton. The number of ribs, on the right side, was thirteen, and on the left side fourteen; in the rorqual, fourteen on each side. Only one of the baleen plates was exhibited; this measured only thirty inches in length, although it was said to be one of the longest. The skeleton wanted the bones of the pelvis, and belonged to a female nearly adult.

Rev. E. E. Hale gave a relation of an ascent recently made by him to the top of Mount Katahdin, in Maine.

Mr. Hale found on the summit but eight phanerogamous plants which are not found below that elevation. All of these prove to be common to Katahdin and Mount Washington. Katahdin is nearly one hundred miles farther north than Mount Washington, and the climate of the summits is probably about the same.

The plants referred to are:

Arenaria greenlandica,	*Empetrum nigrum,*
Solidago virgaurea [*alpina,*]	*Juncus trifidus,*
Vaccinium uliginosum,	*Carex washingtoniana,*
Diapensia lapponica,	*Prenanthes thesoidea.*

Mr. Hale also observed the *Lycopodium anotinum.*

Dr. J. Wyman announced some observations recently made by him, on the perforation of shells by the animal of *Natica heros.*

ADDITIONS TO THE LIBRARY.

Catalogue of Plants in the Cabinet of the Providence Franklin Society. From *S. T. Olney.*

Annals and Magazine of Natural History. Nos. 101, 102 and 103. *Courtis Fund.*

Gray, G. R. Genera of Birds. 4to. No. 16. *Audubon Fund.*

Sept. 3, 1845.

The President in the Chair.

Dr. S. Cabot, Jr., communicated a list of birds observed by him, during a late visit to the Magalloway River, one of the sources of the Androscroggin, including only such as he had ascertained to have their breeding places in that vicinity. These were:

Mergus serrator,	*Anas sponsa,*
" *cucullatus,*	*Fuligula clangula.*
Anas obscura,	

He also exhibited a specimen of *Orismia canivetii,* Lesson, concerning which he had lately noticed a remark in M. Lesson's work, to the effect that the species is very rare, and that the author had never seen a perfect specimen. Dr. Cabot procured his in Yucatan.

Prof. Asa Gray read a paper prepared by himself and Dr. George Engelmann, entitled, "*Plantæ Lindheimerianæ: an Enumeration of the Plants collected in Texas, and distributed to Subscribers, by F. Lindheimer; with Remarks, and Descriptions of New Species.*" It was referred to the Publishing Committee. In it the following new genera and species were characterized:

New Genera Proposed.

Thysanella. Flores dioico-polygami. Perigonium pentaphyllum petaloideum; phyllis omnibus erectis margine scariosis et eroso-fimbriatis, duobus exterioribus cordato-sagittatis post anthesin auctis, interioribus minoribus ovato-lanceolatis, pectinato-fimbriatis. Stamina 8: filamenta filiformia perigonium adæquantia. Ovarium (infertile) trigonum: styli 3 filiformes; stigmatibus simplicibus. — Herba ramosa, glabra (bipedalis) in

arenosis Georgiæ vigens, caulibus virgatis strictis ; foliis angusto-linearibus elongatis acutatis striatulis sessilibus ; ochreis truncatis setis capillaribus longissime barbatis ; floribus (incarnatis) racemoso-spicatis ; spicis solitariis vel geminis, paniculatis, dense imbricatim ochreato-brachteatis ; ochreis oblique truncatis in acumen aristiforme productis ; pedicellis in medio articulatis.

Brazoria. Calyx late campanulatus, bilabiatus (labio superiore breviter 3-lobo, inferiore 2-lobo,) per anthesin inflatus, post anthesin e surrectione labii inferioris clausus, indistincte nervosus, reticulato-venosus. Corolla tubo longe exsuto, fauce inflata ; limbi bilabiati labio superiore erecto subgaleato breviter bilobo vel integro, inferiore profunde trifido, lobis rotundatis patentibus seu recurvis. Stamina 4, sub labio superiore adscendentia : filamentum supra medium corollæ adnata, ubi pilosa, inferioribus eminentibus : antheræ approximatæ ; loculis distinctis divaricantibus ad rimam pl. m. ciliatis. Stylus glaber, apice æqualiter bifido, lobis subulatis. Achenia sicca. — Herbæ annuæ, Texanæ, facie foliis et inflorescentia Physostegiæ. Corolla incarnata, fauce luteola.

Species Described.

Ranunculus texensis,
" trachyspermus,
Hypericum gymnanthum,
Sida lindheimeri,
Gaura lindheimeri,
Helianthus præcox,
Cuscuta cuspidata,
Solanum texense,
Scutellaria cardyophylla,
Monarda lindheimeri,
Pilinophytum lindheimeri,
Sagittaria stolonifera,
Spiranthes vernalis,
Scilla angusta,
Spartina junciformis,
Scirpus olneyi,
Vesicaria auriculata,
Mammilaria similis,
" sulcata,
Echinocactus setispinus,
" lindheimeri,
Cereus cæspitosus,
Asclepias lindheimeri.
Gonolobus cynanchoides,
Lithospermum breviflorum,
Eutoca strictiflora,
" patuliflora,
Brazoria scuttellarioides,
Dipteracanthus micranthus,
" drummondii,
" linearis,
" nudiflorus,
Polygonum cristatum,
Aristolochia longiflora,
Euphorbia arkansana,
" bicolor,
Aphora humilis,
Tragia brevispica,
Sisirincum minus.

Prof. Gray exhibited specimens of a new manner of engraving on stone, well adapted for botanical and other natural history illustrations. The cost was stated to be very low compared with copper-plate engravings.

A paper containing an elaborate description and drawings of the anatomy of the animal of *Helix albolabris*, Say, by Joseph Leidy, M. D., of Philadelphia, Corresponding Member, was read, and referred to the Publishing Committee.

A letter from Dr. C. T. Jackson, dated at Copper Harbor, Lake Superior, Aug. 12, 1845, was read. Dr. J. described a large block of native copper discovered by Major Campbell on the lake shore, about 40 miles west of Keweenan Point. It measured 3 feet 4 inches in length, by 2 feet 5 inches in width, and 7 to 10 inches in thickness, and weighed about 2000 lbs. Its surface is deeply cut by grooves of abrasion, and is covered with fine drift scratches. It was found among loose blocks of sienite on the beach, nearly covered by gravel. Dr. J. considered it to be a valuable geological specimen illustrative of drift phenomena.

Dr. J. also related some particulars concerning the vein of black oxide of copper near Fort Wilkins. The ore occurs in bunches 5 or 6 feet long, and generally 8 inches thick in the middle. The bunches run out into dead vein-stone of calcareous spar. The principal ore in the mine was stated to be the black siliceous oxide, mixed with or covered by chrysocolla or green hydrous silicate of the oxide of copper. Laumonite and analcime abound also in the vein. Dr. Jackson supposed the chemical action producing the various minerals to be as follows. They resulted from the action of lime on gelatinous silicate of alumina. The oxide of copper was precipitated from the gelatinous silicate by the action of lime, and black silicate resulted from the influence of heated water, while green silicate formed when the water was cold: when lime predominated, the black oxide was precipitated pure; but when there was a deficiency of it, the silex combined with the oxide of copper. Laumonite

was formed by the combination of silica, alumina and lime in water. The laws governing this action, he considered to be perfectly obvious to the chemist.

A letter from M. Lièvard, dated Port Louis, Mauritius, June 25, 1844, recently received by the hands of Mr. Samuel, was read. It announced that M. Lièvard had sent by Mr. S. specimens of *Pedum*, and a head of the *Histriophorus indicus*, for the Society. These specimens, however, were not forthcoming. M. L. intimated his intention of sending a box of shells, and several of his own publications concerning the meteorology of Mauritius.

A letter from Mr. Tuomey, containing a list of fossil shells sent by him to the Society, was read.

The following gentlemen were elected corresponding members: S. C. Clark, Chicago, Illinois; A. Clapp, New Albany, Indiana.

DONATIONS TO THE CABINET.

Fossils from Gay Head. From *J. B. S. Jackson.*

A box of fossil shells, from the tertiary strata near Petersburg, Virginia. From *M. Tuomey.*

ADDITIONS TO THE LIBRARY.

Audubon and Bachman. Quadrupeds of N. America. Plates 50 to 55. *Subscribers.*

Ruschenberger's First Books of Natural History. From the *Author.*

Sept. 17, 1845.

The President in the Chair.

A letter from Rev. Francis Mason, missionary in Tavoy, Burmah, was read. It contained notices of the Zoölogy of

that region, and particularly of the habits, localities, &c., of the animals of the land shells formerly sent by him, of which he gave also the native names. He announced that he had collected a number of species not previously seen by him.

A letter from A. G. Salisbury, dated Syracuse, N. Y., Sept. 4, 1845, accompanying specimens of sulphate of lime, was read. The specimens were described to be artificial crystallizations of the salt of lime obtained from the cisterns of salt-works, in which the brine, before being drawn off for evaporation, is settled by the aid of steam. They adhere to the sides of the cistern. The specimens themselves had not arrived.

Dr. J. Wyman read descriptions and presented drawings of two species of *Linguatula*, which were referred to the Publishing Committee. The two species described are:

Linguatula armillata. Body cylindrical, slightly flattened on its anterior face, and surrounded by about 20 distinct rings, separated from each other by a wide interval.

From the intestines of *Python bivittata.*

L. clavata. Cylindrical, largest in its anterior fourth, diminishing towards the tail which is slightly dilated. Tegument with indistinct annuli, not imbricated, and deficient at both extremities. Anus terminal. From the lungs of a South American *Boa.* It may prove to be *Linguatula subcylindrica* of Diesing.

A paper, by Dr. Joseph Leidy, of Philadelphia, Corresponding Member, was read *On the Existence of the Sack of the Dart and of the Dart in several Species of North American pneumobranchiate Mollusks.* It was referred to the Publishing Committee.

Dr. Leidy stated that he had recently dissected two specimens of *Tebennophorus caroliniensis*, in which he had the good fortune to discover the *sack of the dart*, with the contained *dart.* The sack was found situated at the junction of the neck of the oviduct with the spermatheca, was about 3 lines long and 2 in thickness, muscular in structure, and lined internally with mucous

membrane. The sack is the *cæcum* marked *g* in Dr. Wyman's plate of a dissection of the same animal published in the Society's Journal. On the bottom of the sack, in both individuals, there was a papillary eminence, to the summit of which, in one individual, was attached the dart. It was about 2 lines in length, shaped like a cock's spur, the point being bent upwards towards the cavity of the neck of the oviduct. It is hollow, and composed of carbonate of lime, effervescing and soluble in weak chlorohydric acid.

Dr. Leidy also stated that he had repeatedly seen the dart in *Planorbis parvus*, but had sought for it in vain in other species.

DONATIONS TO THE CABINET.

Collection of fossils from the limestone strata near Louisville, Ky. From *Jedediah Cobb*, *M. D.*, Louisville.

Fossils from the upper Missouri. From *T. Sprague*, Hingham.

Two shrew moles, *Scalops aquaticus ;* one in white pelage. From *Joseph Barratt*, *M. D.*, Middletown, Conn.

October 1, 1845.

Dr. Samuel Cabot, Jun., in the Chair.

Dr. J. B. S. Jackson read a paper on the fossil bones of *Mastodon giganteus*, disinterred from a marl pit on Schooley's Mountain, New Jersey, and now exhibiting in this city.

Dr. Jackson remarked, that the locality where the bones were procured, is fully described in the Proceedings of the American Philosophical Society, D c., 1844. The chief point of interest is the mounted skeleton, this being far more perfect than any that has yet been seen, though less so, it is said, and altogether less interesting, than the one now exhibited in New York ; the feet, the sternum and a few of the caudal vertebræ only are

wanting. Several skeletons were found in the same bog, and, according to the owners who dug them out, and who are evidently trustworthy men, they were all found lying in a confused state, except the one in question, which was found at some distance from the others, upon its side, the bones being in a natural and undisturbed position. Supposing, then, that all the bones belonged to the same individual, and, also, from the soundness of their structure, that none of the larger vertebræ are wanting, this specimen shows what seems never before to have been observed, the true number of the dorsal vertebræ in *Mastodon giganteus*. Cuvier remarked (*Ossemens Fossiles*) that there were 19, but perhaps, said he, one may be wanting, and then the number would be the same as in the elephant; now in the present case there are just 20. The skeleton of the so called *Missourium* has been reconstructed under the direction of Prof. Owen, and put up in the British Museum as that of a *Mastodon*, and, from the full-length drawing which Mr. Lyell had made of it, and which he has recently brought out with him to use in his lectures before the Lowell Institute, it appears that on the left side, this being the front view, there are but 18 ribs, these last, in a perfect skeleton, of course, determining the number of the dorsal vertebræ. Of the cervical vertebræ of the skeleton now here, there are 7, of the lumbar 3, of the sacral 3, and of the caudal 23, besides those that are wanting, the tail probably descending to the knee-joint or below it, and being considerably longer than it is represented in the drawing above referred to. The length from the intermaxillaries to the pelvis, inclusive, is 14 feet, and the greatest height 10 feet 8 inches; but much allowance must be made for these measurements. The skeleton is that of a young adult, and, from the small size of the proper tusks, and the absence of any in the lower jaw, the individual was probably a female, the length of the tusks beyond the intermaxillaries being 25 inches, and the greatest circumference 11 inches. A curious fact is mentioned by the owners, that, about in the situation of the stomach, a bushel or more of small twigs, about an inch in length, were found, most of which fell into a powder on exposure to the air, though a small specimen was preserved, and may be seen in the collection; the same has been observed in some other cases.

There are also in the collection two other crania which are immature, but perfect, except the tusks, and of these Dr. J. gave

the measurements and the internal capacity, this last being 282 cubic inches in one, and 287 in the other; the cranium of an African elephant, in the Society's Cabinet, measured 338 inches. The next specimen noticed was the lower jaw of a young individual, showing the alveoli for the inferior tusks, 20 lines in depth, and about $\frac{3}{4}$ of an inch in diameter at the outlet.

Prof. Owen states that in the *M. giganteus* the first and second molars have two ridges, the third and fourth have three, and the last has four or five, (*Annals of Nat. Hist.* vol. xi.); and it may be inferred that he regards five as the whole number of teeth. Now, the present collection demonstrates that, in the lower jaw at least, the true number is six, the two first having two perfect ridges, the three next having three, and the last four, with a marked talon, or single point at the posterior extremity. The lower jaw of the calf, with the three others belonging to the crania above mentioned and to the skeleton, form a series in which the corresponding teeth are satisfactorily made out, and, as the calf had never shed one, and the skeleton had evidently got its last, we may be sure that we have the whole number. In the calf there are three teeth, and one in the socket, the first measuring $1\frac{1}{4}$ inches in length and $\frac{3}{4}$ of an inch transversely; with regard to the second tooth, it should be stated that, besides the two proper ridges, there is a third which should perhaps be included, though imperfectly developed, and having no corresponding fang. The youngest cranium has two teeth with three ridges, and one in the sockets, the oldest three, with three ridges on the right side, and one in the socket, the left anterior having fallen out; and the skeleton one with three ridges, and one with four and a talon, this last tooth being $6\frac{3}{4}$ inches in length. The upper molars correspond with those in the lower jaw, so far as observed, but as the cranium of the calf was not procured, the existence of the two first teeth can only be inferred. Amongst the loose bones which make up the remainder of this collection, is a three-ridged tooth, evidently from the socket, as it is not at all worn, showing the formation of the crown before the fangs have begun to develop. Two styloid bones are also seen, about 8 inches in length, and these have never before been observed, so far as Dr. J. is aware.

A very large tooth of a *Mastodon*, brought from Burmah, now in the Society's Collection, has seven distinct ridges and a talon.

A letter from James Brown, Esq., accompanying a box of British moths presented by Mrs. B. F. Foster, was read.

DONATIONS TO THE CABINET.

A box of British moths. Collected and presented by *Mrs. B. F. Foster*, of Chelsea, England, through James Brown, Esq.

ADDITIONS TO THE LIBRARY.

Hooker, W. J. Species Filicum. Parts i. ii. iii. 8vo. London. *Courtis Fund.*

Lyell, Ch. Travels in North America. 2 vols. 12mo. From the *same.*

Transactions of the Entomological Society of London. 2 parts. From the *Entomol. Society.*

Catalogue of the Shells of the United States, in the Cabinet of C. M. Wheatley. 12mo pamphlet. From the *Author.*

October 15, 1845.

D. H. Storer, M. D., Vice President, in the Chair.

Dr. S. Cabot, Jun., stated that a specimen of *Silvia agilis*, Wilson, a bird not known to have been met with before in this State, had been shot at Brookline.

The second part of the fifth volume of the Society's Journal was announced to have been published, and copies were placed on the table.

A list of the species of the short-tailed crabs, DECAPODA BRACHYURA, in the collection made by Mr. Bartlett on the Southern shores of the peninsula of Florida, between Cape Florida and Charlotte Harbor, and the adjacent keys, as prepared by Dr.

Lewis R. Gibbes, of Charleston, S. C., was transmitted by Dr. Binney. The list is made in aid of our knowledge of the geographical distribution of the Crustaceans.

Mithrax hispidus, Herbst,
" sculptus, Lam.,
Zantho mercenaria, Say,
Lupea Sebæ, M. Edwards,
" dicantha, Leach,
Dromia lator, Parra,
Albunea symnista, Fab.,
Grapsus lividus, M. Edwards,
" cruentatus, Lat.,
Ranilia muricata, M. Edwards,
Eriphia gonagra, Fab.,
Chorinus heros, Herbst,
Pericera cornuta, Herbst,
" bicornuta, Lat.,
Sesarma cinerea, Bosc,
" Pisonii, M. Edwards,
Calappa marmorata, Fab.,
Ocypoda arenaria, Lat.,
Panopeus Herbstii, M. Edwards,
Hepatus fasciatus, Say,
Libinia dubia, M. Edwards,
Gelasimus vocans, Say,
Cardisoma guanhumi, Marg.,

together with several other undetermined species.

Drs. Gould and Cabot were appointed a Committee to consider the expediency of memorializing the Navy Department on the subject of employing a naturalist on board the vessel commissioned for the survey of the coast of Oregon and Columbia River.

Joseph Barratt, M. D., of Middletown, Conn., was elected a corresponding member.

ADDITIONS TO THE LIBRARY.

Cuvier, G. Léçons d'Anatomie Comparée. 2d edit. Paris. tome 8. *Courtis Fund.*

Virlet D'Aoust. Mémoire sur les filons en général. Pamph. 8vo. Paris, 1841. From the *Author.*

Virlet d'Aoust. Notes sur quelques Phenomènes de Deplacemens dans les Rochers, etc., etc. Pamph. 8vo. Paris, 1841. From the *same.*

Jacquemont, Victor. Voyage dans l'Inde pendant les années 1828 à 1841. 6 tomes. 4to. Paris, 1841. *Audubon Fund.*

November 5, 1845.

The President in the Chair.

A communication from Prof. Jeffries Wyman, on the subject of the fossil skeleton recently exhibited in New York as that of a sea-serpent under the name of *Hydrarchos Sillimani*, was read.

Prof. Wyman stated that, during a recent visit to New York, he had an opportunity of examining the fossil remains exhibited in Broadway under the name of Hydrarchos Sillimani, and purporting to be those of an extinct marine serpent. These remains consist of a head and vertebral column, measuring in all 114 feet, of a few ribs attached to the thoracic portion of the latter, and of parts of supposed paddles.

I. *The head.* This is five feet seven inches long, or one twentieth of the entire length of the whole animal. That part purporting to be the cranium proper, and which serves more especially to protect the brain, consists apparently of a single bone, and is destitute of any visible sutures, is a little more than one foot long, about five inches wide, and has, attached laterally by cement, two bones forming incomplete zygomatic arches. Inferiorly it is so much covered with cement that little or nothing can be seen of its surface. Posteriorly there are no condyles, nor any foramen for the passage of the spinal marrow; in fact, no foramina are anywhere visible. This absence of sutures and foramina naturally leads to the supposition that it is not the true cranium, but may be some bone or fragment not in its natural position. The size of the supposed cranium is obviously too small for lodging the brain of an animal 114 feet long, inasmuch as its cavity, if it had one, could exceed but little that of the spinal canal which is visible in some of the vertebræ. The upper jaw is narrow and elongated, so that the whole head, with its broad zygomatic arches, has something of the general outline of that of an *Ichthyosaurus*. The jaw has been crushed by violence, as is obvious from the broken edges of the pieces; and, in one instance at least, a fragment, containing a tooth, is in an inverted position.

These are all held together by the natural matrix in which the whole was originally imbedded. Near the union of the upper jaw with the cranium, are some sutures, but not sufficiently exposed to enable one to identify them. At the tip of the jaw, there is a fragment of bone without teeth or alveoli, and differing in the appearance of its texture from the bones adjoining; this is, probably, a fragment which has found its way to its present locality by accident, and is retained there by the matrix. The lower jaw corresponds with the upper in its elongated form, but the condyles and processes are wanting.

The teeth, organs of great importance in determining the natural affinities of any animal, are many of them in a complete state of preservation, and some so completely exposed as to be studied with great ease. Through Dr. Koch's kindness, Prof. W. was enabled to give them a satisfactory examination. The crowns are laterally compressed, of a somewhat triangular form, but deeply indented on the edges, and all which were sufficiently exposed for examination, were implanted into the *double alveoli of the jaw by means of double roots.* Here is the most positive evidence that the individual to which they belonged was no reptile, but a warm-blooded, mammiferous animal; for, according to the odontological rule, no animal not mammiferous ever possesses a tooth with double roots, implanted into double alveoli or sockets. The teeth of sharks are no exception, for, although there exists in them an approximation to a double root, they are attached to the jaw by ligament only.

II. *Vertebral column.* This consists of a series of bones which could never have belonged to the same individual, as is obvious from the fact that they manifest different degrees of ossification, and must, therefore, have belonged to individuals of different ages. The plates attached to the extremities of the bodies of the vertebræ are, in some instances, perfectly coössified, in others not, or, in some cases, detached, leaving the imperfectly ossified surface exposed. In some of the vertebral bones the spinal canal is represented by a cast of its cavity, which, as already stated, would nearly equal the diameter of that of the supposed cranium, which it could never do in a warm-blooded animal, especially a cetacean, where the brain acquires a high degree of development. The bodies of the vertebræ and the articulating processes, do not

present any of the characters of an ophidian reptile, the ball and socket joint of the bodies and the double articulating processes being in all cases wanting. The processes of the vertebræ, however, are in general so imperfect, that this last assertion must be taken with some limitation. It is also worthy of notice that some of the vertebræ have the appearance of having been imbedded in a matrix, while others are so clean and comparatively recent in their appearance, that it seems impossible that they should have been thus imbedded.

III. *Ribs.* These are few in number, and are not supposed to be anything more than an incomplete set. Some of the more perfect ones present two articulating surfaces, one at the head and the other at the tubercle, like those of most animals, but entirely unlike those of the serpents. They are remarkable for their flattened, club-shaped extremities, to which there is, however, something analogous in the herbivorous cetaceans.

IV. *Paddles.* These are composed of two kinds of pieces; one of which possibly consists of the long bones, naturally forming a part of an anterior extremity; but which he could not identify on a cursory examination. The other pieces consist not of bones, but of *casts of the cavities of a camerated shell, a species of Nautilus*, of which specimens, brought from the State of Alabama, and now in the Cabinet of the Academy of Natural Sciences, were shown to Prof. W. by Dr. Morton, of Philadelphia. These could not fail to strike the eye at a glance, when examined by any one acquainted with the forms of fossil nautiloid shells.

From the facts above stated, Prof. Wyman considered it to be evident to those who have any acquaintance with fossil osteology, 1st, that these remains have never belonged to one and the same individual; 2d, that the anatomical characters of the teeth indicate that they are not those of a reptile, but of a warm-blooded mammal.

As to the precise species to which they belonged, it is not so easy to decide. The late Dr. Harlan, of Philadelphia, to whom the fossil osteologist is so much indebted, several years since, described some bones and a portion of a jaw, brought from Alabama, which he considered as those of a reptile, and to which he gave the name of *Basilosaurus*, believing that they belonged to a gigantic Saurian. The subsequent examinations of Prof. Owen,

however, demonstrated that they were not saurian but cetacean bones, and he gave to them the name of *Zeuglodon ceti*, the generic name being derived from the peculiar form of the teeth, which consist of two roots yoked together by the crown. The crowns of the teeth which fell under the observation of Prof. Owen, were imperfect, and it is therefore impossible to say how far they are identical with those of the animal of which we have been speaking. The latter do, however, present a complete resemblance to the teeth described and figured by Prof. Gibbes, of Columbia, S. C., in the Proceedings of the Academy of Natural Sciences, for June, 1845, under the name of *Dorudon serratus*. These last have been compared by Prof. G. with those of a *Zeuglodon* at Albany, in the State Cabinet, and in speaking of them, he says, "I was much struck with the similarity in their general characters with those of Dorudon." "The teeth of the *Zeuglodon* are solid, of a dense structure and very strong, and resembling those of the cetacea; while the *hollowness* of those of the *Dorudon* approximate it to the saurians." Other differences of less importance are referred to by Prof. G. The *Hydrarchos* and *Dorudon* are unquestionably members of the same genus; and if the bones at Albany are those of the *Zeuglodon*, it is highly probable that it is to this genus that the preceding must be referred. The character of "hollowness" does not appear to be sufficient to establish generic distinctions, unless it can be shown that it is not the result of imperfect development, or that it is not the consequence of the ossification of the teeth being incomplete. We have not, as yet, a perfect series of the teeth of the *Zeuglodon*, and are therefore ignorant what are the varieties of form which such a series would present in different parts of the same jaw. The figures and descriptions of Prof. Gibbes are of great value, being the only perfect representations of individual teeth which have as yet appeared, and it is to be hoped that his future researches may enable him to complete the osteological description of these interesting remains.

A communication was received from Lewis R. Gibbes, M. D., of Charleston, S. C., enclosing a Catalogue of the species of Crustaceans contained in the Cabinet of this Society, as recently examined and determined by him. Viz.

CATALOGUE

Of the Collection of Crustaceans in the Cabinet of the Boston Society of Natural History. Sept. 1, 1845.

PODOPHTHALMIA. Decapoda.

BRACHYURA.

OXYRHINCA.

I. Stenorhyncus, Lam.
1. *phalangium, Penn.*
II. Inachus, Leach.
2. *scorpio, Fab.*
3. *thoracicus, Roux*, male.
III. Libinia, Leach.
4. *canaliculata, Say*, male and fem.
5. *dubia, M. Edw.*
IV. Pisa, Leach.
6. *tetraodon, Penn.*, 4 males, 1 fem.
V. Pericera, Lat.
7. *cornuta, Parra?*
8. *bicornuta, Lat.*
VI. Lissa, Leach.
9. *fissirostra, Say*, male.
VII. Maia, Lam.
10. *verrucosa, M. Edw.*, female.
VIII. Mithrax, Leach.
11. *hispidus, Herbst.*
IX. Chorinus, Leach.
12. *heros, Herbst.*
X. Acanthonyx, Lat.
13. *lunulatus, Lat.*, male.
XI. Lambrus, Leach.
14. *mediterraneus, Roux*, male.
15. *longimanus, L.*, male.
XII. Cryptopodia, M. Edw.
16. *fornicata, Fab.*, male.

CYCLOMETOPA.

XIII. Carpilius, Leach.
17. *corallinus, Fabr.*, male and f.
XIV. Xantho, Leach.
18. *mercenaria, Say.*
XV. Pseudocarcinus, M. Edw.
19. *Rumphii, Fabr.*
XVI. Platycarcinus, Lat.
20. *irroratus, Say*, male and fem.
XVII. Eriphia, Latr.
21. *spinifrons, Herbst*, m. and fem.
22. *gonagra, Fabr.*, male and fem.
XVIII. Panopeus, M. Edw.
23. *Herbstii, M. Edw.*
XIX. Carcinus, Leach.
24. *mœnas, Baster*, male and fem.
XX. Platyonichus, Lat.
25. *ocellatus, Herbst*, male.
XXI. Portunus, Fab.
26. *Rondeletii, Risso*, male.
27. *corrugatus, Penn.*, m. and fem.
28. *plicatus, Risso*, male and fem.
XXII. Lupea, Leach.
29. *tranquebarica, Fab.* male.
30. *Sebæ, M. Edw.*
31. *dicantha, Lat.*

CATOMETOPA.

XXIII. Thelphusa, Lat.
32. *indica, Lat.*, male and female.
XXIV. Cardisoma, Lat.
33. *guanhumi, Lat.*, male.
XXV. Boscia, M. Edw.
34. *dentata, Lat.*, female.
XXVI. Grapsus, Lam.
35. *pictus, Lat.*, male and female.
36. *varius, Lat.*, female.
37. *cruentatus, Lat.*
38. *lividus, M. Edw.*
XXVII. Gecarcinus, Lat.
39. *ruricola, L.*, male.
40. *lateralis, Frem.*, female.
XXVIII. Gelasimus, Lat.
41. *vocans, Lat.*, male and female.
XXIX Ocypoda, Fab.
42. *arenaria, Latr.*, male and fem.
43. *rhombea, Fab.*, female.
XXX. Gonoplax, Leach.
44. *rhomboides, Fab.*, male.

XXXI. Sesarma, Say.
45. *Pisonii, M. Edw.*, female.
46. *africana ?, M. Edw.*, m. and f.
47. *cinerea, Bosc.*

XXXII. Plagusia, Lat.
48. *squamosa, Herbst*, male.
XXXIII. Nautilograpsus, M. Edw.
49. *minutus, Fab.*, male and fem.

OXYSTOMA.

XXXIV. Calappa, Fab.
50. *granulata, L.*, male and fem.
51. *marmorata, Fab.*
XXXV. Dorippe, Fab.
52. *lanata, Bosc*, male.
XXXVI. Platymera, M. Edw.
53. *Gaudichaudii, M. Edw.*, f. y'ng.

XXXVII. Leucosia, Fab.
54. *craniolaris, L.*, female.
XXXVIII. Cymopolia, Roux.
55. *Caronii, Roux*, male and fem.
XXXIX. Hepatus, Lat.
56. *fasciatus, Lat.*, male.
XL. Ilia, Leach.
57. *nucleus, Herbst*, male and fem.

ANOMOURA.

XLI. Dromia, Fab.
58. *vulgaris, M. Edw.*, m. and f.
59. *lator, Parra.*
XLII. Lithodes.
60. *arctica, Lam.*
XLIII. Remipes, Lat.
61. *testudinarius.*
XLIV. Ranilia, M. Edw.
62. *muricata, M. Edw.*
XLV. Albunea, Fab.
63. *symnista, Fab.*

XLVI. Hippa, Fab.
64. *emerita, L.*
XLVII. Pagurus, Fab.
65. *Bernhardus, L.*
66. *granulatus, Olivier.*
67. *longicarpus, Say.*
68. *pollicaris, Say.*
XLVIII. Cenobita, Lat.
69. *Diogenes, Lat.*

MACROURA.

XLIX. Scyllarus, Fab.
70. *sculptus, Lam.*
L. Thenus, Leach.
71. *orientalis, Fab.*
LI. Palinurus, Fab.
72. *vulgaris, Lat.*
73. *argus, Lat.*
LII. Astacus, Fab.
74. *Bartonii, Fab.*
75. *affinis, Say.*
LIII. Crangon, Fab.
76. *septemspinosus, Say.*
77. *cataphractus, Oliv.*

LIV. Sicyonia, M. Edw.
78. *sculpta, M. Edw.*
LV. Galathea, Fab.
79. *squammifera, Leach.*
LVI. Palemon, Fab.
80. *carcinus, Fab.*
81. *jamaicensis, Herbst.*
82. *serratus, Penn.*
83. *squilla, L.*
84. *locusta, Fab.*
LVII. Peneus, Lat.
85. *caramote, Risso.*
86. *setiferus, L.*

PODOPHTHALMIA. Stomapoda.

LVIII. Squilla, Fab.
87. *scabricauda, Lat.*
88. *mantis.*
89. *dubia, M. Edw.*
90. *Desmarestii, Risso.*

LIX. Gonodactylus, Lat.
91. *scyllarus, Fab.*
92. *chiragra, Fab.*

The specimens labelled as *Remipes testudinarius*, *Albunea symnista*, and *Gonodactylus scyllarus*, agree in general with the descriptions given by M. Edwards under those names, but differ in several particulars.

There are also in the Cabinet several undetermined, and probably undescribed, forms.

Dr. D. H. Storer made some remarks on a living specimen of *Torpedo occidentalis*, the *cramp-fish* or *torpedo*.

Dr. Storer stated that, since the last meeting of the Society, a living specimen of the cramp-fish or torpedo, *Torpedo occidendentalis*, had been exhibited here, and that he, with Dr. J. B. S. Jackson, had had an opportunity of testing its electrical properties. He visited it while it was still in the well of the vessel in which it had been brought here, and it gave, when lifted upon the wet deck, a very distinct shock. This shock was scarcely perceived if the fish was quiet ; it was most marked when the portion directly over the electrical organs was excited. The most powerful effect was produced by seizing the tail with one hand, and grasping that portion of the pectoral fins which was supplied with nerves from the fifth pair ; here, quite a shock was perceived in the arms as high as the elbows. If such effects are produced when the fish is removed from its native element, Dr. S. did not doubt that, when struck by a harpoon while in the water, it might have the power to benumb perfectly, but temporarily, the arms of the fisherman employed in its capture. This fish was seen near the shore at Provincetown, the latter part of October, apparently benumbed ; and a rope being attached to its tail, it was readily dragged on shore. Although this is undoubtedly a southern fish, Dr. S. had never known it to be taken on the eastern coast of Cape Cod, or, in other words, out of Cape Cod Bay. It appears to have been seen, as yet, only on the eastern shore of Cape Cod Bay, between Provincetown Harbor and Orleans, an extent of about thirty miles : and is found in greater numbers upon the eastern shore of *Long-point*, a small neck of land, west of the town of Provincetown, than at any other place. Capt. Atwood informed Dr. S. that at least a dozen specimens have been taken there this season, from the early part of September to this date, Nov. 1st. At Wellfleet they are found, but not in such numbers ; and Dr. S. had heard of a specimen having been taken at Orleans. Capt. Atwood has known only two specimens to have been taken with the hook, while fishing for other species. They are almost always met with just at the margin of the shore, and are taken mostly for the sake of the oil in their livers.

Dr. Storer also observed that he had received, through

the politeness of Dr. Wheatland, of Salem, the specimen of *Balistes*, belonging to the Salem Natural History Society, which was taken there in August, of the present year. It proves to be the *Balistes aurantiacus*, Mitchill. Dr. S. had never known a specimen to be taken before in the waters of Massachusetts. He exhibited a drawing of a specimen taken by Dr. Bates in Portland harbor, Me., and, of course, knew that it must have passed through our waters, it being a southern species. He also exhibited a drawing of this specimen (taken at Salem).

J. C. Fremont, Esq., U. S. Army, was elected a corresponding member.

DONATIONS TO THE CABINET.

Marl fossils, viz., *Planorbis parvus*, *campanulatus*, and *bicarinatus*, *Physa ancillaria*, *Limnea galbana*, *Paludina decisa*, and *limosa*, all of Say; and *Valvata bicarinata*, Lea, with a *Cyclas*, from White Pond, Warren Co., N. J. From *J. Leidy*, *M. D.*

Numenius hudsonicus. From *Dr. Cabot.*

Corvus picus, L., from N. W. of Michigan, and *Bombycivora garrulus*, from Cleveland. From *W. Case*, *Esq.* of Cleveland, Ohio.

Lymnea emarginata, Say, and *L. jugularis*, Say, *Paludina ponderosa*, Say, *Unio lævissima*, *triangularis*, and *formosa*, *Alasmidonta corrugata*. From Lake Superior. From the *same.*

ADDITIONS TO THE LIBRARY.

Adams, C. B. First Annual Report on the Geology of the State of Vermont. 8vo, pp. 90. Burlington, 1845. From the *Author.*

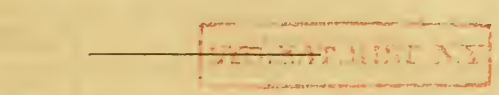
Phillips, John. A Treatise on Geology. 12mo. Edinburg, 1837. *Courtis Fund.*

De La Bêche, H. T. A Geological Manual. 8vo. Philadelphia, 1832. *Courtis Fund.*

Gray, G. R. Genera of Birds. No. 18. Folio. *Courtis Fund.*

Annals and Magazine of Natural History. No. 105, Oct., 1845. *Same.*

The Literary Record and Journal of the Linnean Association of Pennsylvania College. No. 12. 8vo pamph. Oct., 1845. From *Prof. S. F. Baird.*



November 19, 1845.

A. A. Gould, M. D., in the Chair.

Dr. D. H. Storer read a description of a new species of *Syngnathus*, brought from the western coast of California by Capt. Phelps.

SYNGNATHUS CALIFORNIENSIS. Reddish brown, lighter beneath: the lower portion of the sides irregularly dashed with white; 19 transverse plates anterior to the vent, and 47 plates posterior to it. From the tip of the tubular mouth to the posterior edge of the operculum, the length is rather more than one seventh the length of the fish. The greatest depth of the jaws is rather less than one half the depth of the head. The dorsal fin commences on the anterior third of the body, and the height of its rays is less than one third the depth of the body.

D. 42; P. 13; A. 3; C. 10.

Mr. J. E. Teschemacher made some remarks on a collection of Russian minerals lately presented to the Society by Charles Cramer, Esq., of St. Petersburg. He pronounced the specimens to be interesting and to constitute a valuable addition to the Society's collection.

Dr. Samuel Cabot, Jun., exhibited a specimen of *Pica melanoleuca, magpie*, from the North-West part of Michigan, presented to the Society at the last meeting.

Having been struck with some apparent differences in the measurements of this specimen and European specimens of the same bird, Dr. Cabot had instituted a careful comparison between

them, using for the purpose three foreign specimens from his own cabinet, and the one under consideration. He found the measurements to be as follows:

Measurements.	N. American specimen.	European specimen.
	inches.	inches.
Length of bill along the gape, . . .	1.75	1.56
Diameter of bill from above downwards directly in front of nasal depression,	.55	.56
From middle of nostril to end of bill, .	1.12	1.06
Horizontal diameter of bill at nostrils, .	.45	.50
From bifurcation of rami to tip of lower mandible, ...	.85	.75
Wing, from flexure to tip, ...	8.25	7.62
Length of tarsus, ...	1.85	1.85
Length of tail, ...	10.75	10.00
Average length, according to Aud. & Temm.	18.50	18.00

The 5th primary is longest in the American, the 4th and 5th in the European. The white markings on the inside of the primaries are much less distinct in the American than in the European specimens, and the green color on the wings is more prevalent. Although he would not assert that he considered these differences sufficient to constitute the American bird a distinct species, Dr. Cabot believed there was better cause for so doing than in the case of *Corvus corone* of the United States, which Mr. Audubon had described as distinct from *Corvus corone* of Europe, under the name of *Corvus americanus*.

Dr. Cabot also exhibited, and read a description of, a new species of Humming-bird.

He stated that he had examined all the books to which he could get access, without finding any description of this bird; but thought it probable that it might be among the many species lately described in periodical publications which he had not seen.

Trochilus yucatanensis. Length 4 inches. Bill $\frac{5}{8}$ of an inch. First primary longest; primaries curved, broadest at their tips. Tail, somewhat forked, rather more than $1\frac{1}{2}$ inch long, consists of 10 feathers. Bill light yellowish at base and along centre of man-

dibles, dark horn-color at tip and half way along sides. Male brilliant shining emerald on chin, throat and upper part of breast. Head, upper part of neck and back dull golden green with some metallic reflections. Lower part of breast, belly, under tail coverts, central and upper part of tail feathers light bay. Tips and both sides of central tail feathers and outer side of lateral tail feathers dark golden green with metallic reflections. Vent white. Female nearly the same as male, but rufous instead of bright emerald on chin, neck, &c., and less white about vent. This is the most common humming-bird found in Yucatan. It was seen in numbers about the acacias which grew upon the tops of the ruined buildings, where the specimens, from which the above description was taken, were procured.

ADDITIONS TO THE LIBRARY.

Teschemacher, J. E. Essay on Guano. Pamph. 8vo, pp. 51. Boston, 1845. From the *Author.*

Chapman, A. W., M. D. List of Plants growing spontaneously in the vicinity of Quincy, Florida. Pamph. 8vo. 1845. From the *Author.*

Menke, C. T. Molluscorum Novæ Hollandiæ Specimen. 4to. Hanoveriæ, 1843. From *Dr. J. Torrey.*

Gibbes, Robert W., M. D. Descriptions of the Teeth of a New Fossil Animal from the green sand of South Carolina. Pamph. 8vo. Philadelphia, 1845. From the *Author.*

Von Osersky, A. Geognostische Umriss des Nord-Westlichen Ehstlands. Pamph. 8vo, pp. 65. St. Petersburg, 1844. From the *Author.*

Von Osersky, A. Mineralogisch-Chemische Abhandlungen. Pamph. 8vo, pp. 42. St. Petersburg, 1844. From the *same.*

Saunders, W. W. Addresses before the Entomological Society of London. 1842 and 1843. pamph. 8vo. From the *Entomolog. Society.*

Newport, George. Addresses before the Entomological Society of London. 1844 and 1845. Pamph. 8vo. From the *same.*

Journal of Proceedings of the Entomological Society of London. For 1841. From the *same.*

British Coleoptera delineated, &c. 8vo. London, 1840. From *E. S. Dixwell.*

Essai d'une Carte Géologique du Globe terrestre. From the *Geological Society of France.*

December 13, 1845.

The President in the Chair.

Dr. D. H. Storer read a description of a new species of *Leptocephalus,* drawn up from a specimen belonging to the Essex Natural History Society, and lent to him for that purpose by Dr. Wheatland, of Salem. He also exhibited the specimen, which was taken at Cherryfield, Maine.

Dr. S. remarked that, up to this time, only one species of this genus had been known, *Leptocephalus Morrisii*, Pennant, which is found off the coast of England and in the Mediterranean Sea. The *genus* is, therefore, new to this continent. The description is as follows :

Leptocephalus gracilis. In spirits, of a rusty brown color, translucent; the vertebral column and ribs perceptible throughout its whole length. Head small, snout pointed. Eyes circular, pupils black, irides silvery. Length of the fish four and a half inches; of head one quarter of an inch; the greatest depth of the body slightly exceeds the length of the head. Jaws equal.

Pectorals wanting. The dorsal and anal fins, which require the microscope to be distinguished, are continued to the pointed tail, which is formed by their junction. Small black points are noticed upon the margin of the dorsal and anal fins, and also along the lateral line, by means of the glass.

It will be perceived by the above description, which is necessarily very imperfect, the specimen having been preserved in spirit, that this species resembles somewhat the *L. Morrisii*, of Pennant, but the relative proportions of the parts in each, point

them out as distinct species. In Yarrell's figure of the *L. Morrisii*, the length of the fish is $3\frac{1}{3}$ inches, while the head is $\frac{1}{4}$ of an inch long, or $\frac{1}{13}$ the whole length, and the greatest depth of the body is nearly $\frac{1}{3}$ of an inch, or $\frac{1}{10}$ its length. In our species, the entire length of the head is $\frac{1}{17}$ its whole length, and the depth of the body is also about $\frac{1}{17}$ of its whole length.

Dr. Storer stated that of the American genus *Prionotus*, Cuvier and Valenciennes had described four species, of which three had been already noticed in the waters of Massachusetts. He had not expected to be able to include the fourth, *P. punctatus*, among our fishes, as it was supposed to be exclusively a southern species. He had, however, recently obtained it, and could now assert that all the known species are found in the waters of our State. He had also recently obtained an undescribed species, of which he gave the following description:

Prionotus pileatus. Color, above reddish brown, beneath yellowish white. The first dorsal fin is crossed by two oblique white lines, with a black blotch upon the connecting membrane, between the fourth and fifth rays, above the upper oblique line. The entire head is roughened by raised striæ. The lateral projections of the snout are prominent, and margined with very strong crenulations. Two distinct spines at the anterior superior angle of the eye. Opercular spine of moderate size, not elevated at its base above the opercular plate. Preopercular spine large, naked at its posterior extremity, raised and crenulated along its whole outer edge. Length of the head equal to $\frac{1}{4}$ of the length of the body. Length of the pectoral fins equal to nearly $\frac{1}{3}$ the length of the head. The caudal fin is quite deeply emarginated, the outer rays projecting.

D. 10, 13; P. 13; V. 6; A. 12; C. $12\frac{4}{4}$. Length $12\frac{1}{2}$ inches. Massachusetts Bay.

This species differs from the other species of this genus, in the following particulars, viz.:

From the *P. lineatus*, in the greater prominence of the sides of the snout, and in the larger size of their crenulations; in the striations of the head being more delicate; in having two well

marked spines at the anterior superior angle of the eye ; in the preopercular spine being larger ; and in the absence of the second lateral line.

From the *P. Carolinus*, in having the striæ about the head more rough, and in not having the extremities of the free rays of the pectoral fins palmated.

From the *P. punctatus*, in the absence of the smoothness of the striæ over the head generally, and of the two small spines on the side of the mouth, the one back of the lateral lobes of the snout, and the other just above the angle of the jaws ; and of the denticulations at the sides of the spines situated at the anterior superior angle of the eyes ; by the less length of the pectorals and by the emargination of the caudal fin.

From the *P. tribulus*, in the absence of the spine upon the suborbitar bones ; in having the spines generally upon the head less prominent and sharper, and in having the pectorals shorter in proportion to the length of the body.

A description of a new species of *Argyreiosus*, by Mr. J. M. Batchelder, of Saco, Maine, communicated through Dr. Storer, was read.

Argyreiosus unimaculatus. Body nearly circular, much compressed. Breadth $1\frac{1}{10}$ inches. Profile nearly vertical. Lower jaw the longer and hooked. Eyes $\frac{1}{10}$ of an inch in diameter. A filament, $\frac{1}{2}$ of an inch in length, arises on the back in a vertical plane with the origin of the pectoral fin : $\frac{3}{10}$ of an inch back of this, are three very minute spines. Several finlets upon the back and abdomen. Pectoral fins $\frac{3}{10}$ of an inch long. Caudal fin deeply forked.

Color, in parts above the lateral line, dark ; below it, silvery : upon the lateral line, which passes in nearly a right line from the superior angle of the gill covers to the base of the caudal rays, is a nearly circular black spot, the anterior edge of which is just touched by the pectoral fin when depressed.

D. ? P. ? V. ? A. ? C. 14 rays. Length $1\frac{3}{10}$ inches to the base of the caudal fin.

The specimen above described, was taken, with six others, in shallow water, on the beach at Saco, Maine. After having been

preserved a year in spirits, it was sent to Mr. Batchelder, who prepared from it the above description.

Prof. H. D. Rogers submitted to the Society some verbal remarks upon the bones of the *Zeuglodon*, recently exhibited in Boston, under the name of *Hydrarchos*, by their proprietor, Dr. Koch.

Prof. R. mentioned, that, among the loose bones not arranged with the skeleton, he discovered two specimens of the Cochlea of the ear, and he described them as approximating very closely, in form and structure, to the similar bone in the organ of hearing of the whales. They are about the size of a small lemon, and display that variety of the whorled or convoluted form of the cochlea peculiar to the cetacea. This analogy, and their wide deviation from the type of the organ as found in reptiles, he regarded as an interesting confirmation of the decision of Prof. Owen, of London, that this animal, the *Basilosaurus* of Harlan, is no *saurian*, but a true *cetacean*. It was furthermore stated that the two cochleæ were of different dimensions, and therefore, since no animal has ears of unequal dimensions, this fact is an evidence of their having belonged to two distinct individuals.

A paper from Professors Henry D. and William B. Rogers, on two remarkable Boulder Trains, in Berkshire Co., Mass., was then read by the first named gentleman.

After referring to the importance of the phenomena in connection with the interesting question of the origin of the drift, and mentioning the descriptions already given by Dr. Reid and Dr. Hitchcock, the authors proceed to detail their observations made in August last, and to present their own explanation.

These Boulder Trains they describe as starting from the summit of a high ridge in Canaan, New York, each from a particular depression ; ranging in a direction about S. 35° E., across other even higher ridges and their intervening valleys ; the longer train a distance of twenty miles, and the shorter ten miles, about half a mile asunder, and neither of them more than 300 or 400 feet in breadth. The blocks are of great size, from 5 to 20 feet in diameter, are angular and free from diluvial scratches, and, unlike the rounded boulders, are confined to the surface. They all con-

sist of a single kind of rock, identical with that in the crest of the ridge whence they originate.

After exhibiting the inadequacy of either the iceberg or glacier hypothesis to account for their production, the authors proceed to show how all the phenomena may be explained by the theory they have elsewhere advocated, of a sudden discharge of a portion of the Arctic Ocean southward across the land. They discuss the important functions of the wave of translation, show its surpassing velocity and great propulsive power, and trace the influence of vehement earthquakes near the Pole, in dislodging the northern waters and ice, and maintaining in the rushing flood, these vast and potent waves. They then suggest that, at a certain stage of the inundation, the ice, previously floating free, would impinge with irresistible violence against the tops of the submersed hills, and that the Canaan mountain stood precisely in the position to take the brunt of a part of the ice-driving flood, as it swept down the long high slope of the distant Adirondack, and across the low, broad valley of the Hudson.

They next proceed to show that, at the instant when some enormous ice-island struck the crest of the mountain, and scooped the trench which we there behold, a great vortex was produced by the obstruction, thus suddenly thrown in the path of the current, which, endowed with an excessive gyratory or spiral velocity, was capable of sustaining and carrying forward the greater part of the fragments. As in the instance of the waterspout and whirlwind, the functions of whose motion they discuss, the whirlpool would gather into the rotating column the projected blocks, and strew them in a narrow path, in the line along which its pendant apex would drag the ground.

The paper terminated with an application of this idea in detail, to the explanation of each important feature of these Trains: to their deflections from a straight line, the intermission in the boulders at certain places in the Train, and to the fact that some of the blocks have been violently broken at the moment previous to their final rest.

The paper was referred to the Publishing Committee.

Mr. Bouvé exhibited, and remarked upon, a beautiful collection of tertiary fossils, recently presented by M. Tuomey,

Esq., of Petersburg, Va. The following is a list of the species:

CRETACEOUS.

Anomia argentaria, Morton.
Exogyra costata, Say.
Belemnites americanus.

EOCENE.

Cardita planicosta, Lam.
Turritella Mortoni, Conrad.
Ostrea compressirostra, Say.
" sellæformis, Conrad.
Cucullæa gigantea.
Scutella Lyelli, Conrad.
" macrophora, Ravenel.

MIOCENE.

Anomia ephippium, Lin.
" Ruffini, Conrad.
Astarte concentrica, Conrad.
" undulata, Say.
Cardita granulata, Say.
" tridentata, Say.
Cardium sublineatum, Conrad.
Carditamera arata, Conrad.
Chama corticosa, Conrad.
" congregata, Conrad.
" arcinella, Lam.
Crepidula fornicata, Say.
" costata, Morton.
" spinosa, Conrad.
Crassatella undulata, Say.
Cytherea reposta, Conrad.
" Sayana, Conrad.
Fissurella redimicula, Say.
Cyrena densata, Conrad.
Dispotæa ramosa, Conrad.
Artemis acetabulum, Conrad.
Arca lienosa, Say.
" limula, Conrad.
" incilis, Say.
Pectunculus subovatus, Lam.
" lentiformis, Conrad.
" aratus, Conrad.
" tricenarius, Conrad.
" parilis, Conrad.
" tumulus, Conrad.
Venus tridacnoides, Lam.
" Mortoni, Conrad.
" Rileyi, Conrad.
Venus capax, Conrad.
" mercenaria, Conrad.
" cribraria, Conrad.
" alveata, Conrad.
Fulgur contrarius.
Natica heros, Say.
" duplicata, Say.
Oliva litterata, Lam.
" canaliculata, Lea.
Dentalium dentale, Lin.
Solarium.
Mactra congesta, Conrad.
" lateralis, Say.
Ostrea disparilis, Conrad.
" sculpturata, Conrad.
" subfalcata, Conrad.
Ostrea ———.
Panopæa reflexa, Say.
Perna maxillata, Lam.
Plicatula marginata, Say.
Pecten Mortoni, Rav.
" eboreus, Conrad.
" Jeffersonius, Say.
Teredo fistula, H. C. Lea.
Petaloconchus sculpturata, Lea.
Conus adversarius, Conrad.
" diluvianus.
Cypræa caroliniana, Conrad.
Fasciolaria mutabilis, Conrad.
" rhomboidea, Rogers.
Fusus quadricostatus, Say.
Buccinum Tuomeyi, Lea.
Turritella alticostata.

Dr. Gould stated that he had received, for the Society, from Thomas A. Green, Esq., of New Bedford, three living specimens of *Pholas costata*, and three of *Pholas truncata*, Say.

They were taken by the mud machine, at the end of the Long Wharf, in New Bedford. Mr. G. thinks they were at a depth of perhaps two feet in the mud, and, from the number obtained in half an hour's search, he believes them to be abundant.

Dr. Gould regarded this as a very interesting discovery. He was not aware that *P. costata* had been heretofore found alive this side of the Gulf of Mexico, though a bed of dead shells was discovered by Prof. C. B. Adams in the vicinity of New Bedford six or eight years ago, which at the time excited surprise, these vestiges of an animal, supposed to belong to a warm climate, not then known to live within more than a thousand miles, showing that the animal must have flourished there at no very distant period.

The animal is of a caucasian hue, and its siphonal tubes, which are united, are capable of great extension, certainly to four times the length of the shell, maintaining its full size, and of being moulded to every possible shape. In one animal the siphon was beautifully stippled near its tip with mohagany brown. The foot is about an inch long, its adhering surface not unlike the sole of a sharp-pointed shoe in shape. The accessory portions of the hinge are not calcareous, but pergamineous, consisting of two triangular pieces united base to base, one nearly an inch long, spear-pointed, filling the anterior fissure, and another small, nearly equilateral, shutting down posteriorly.

P. truncata is described by Say as $1\frac{2}{3}$ inches in length; whereas the New Bedford specimens are $2\frac{1}{2}$ inches in length, and of proportional width. He gives South Carolina as its habitat, and Dr. G. was not aware that it had been before found to the northward of that locality.

The animal is of a dark, smoky, almost inky color. The *siphon* less extensive than that of *P. costata*, and whether more or less extended, always maintains a tapering form, and is everywhere circularly and coarsely corrugated. The respiratory orifice is seen to be striped alternately black and white, the latter stripes marking the presence of fourteen tentacular organs. The *foot* is oval, one third longer than broad. The *supplementary valve* is single, calcareous, halberd-shaped, pointed anteriorly, rounded posteriorly and contracted at the sides; marked with lines of growth, parallel to its margin, and channelled on the median line.

John Curtis, M. D. of Lowell, was elected a member.

John L. Le Conte, of New York, was elected a corresponding member.

DONATIONS TO THE MUSEUM.

Specimens of *Pholas costata* and *Pholas truncata*. From New Bedford harbor. By T. A. Greene, Esq.

ADDITIONS TO THE LIBRARY.

American Journal of Agriculture and Science. Conducted by E. Emmons, M. D. and A. J. Prince, M. D. Vol. ii. No. 2. For Oct., Nov., and Dec., 1845. 8vo. Albany. From the *Editors*.

Annals and Magazine of Natural History. For Nov. 1845. 8vo. London. *Courtis Fund*.

Audubon, J. J., and Bachman, J. North American Quadrupeds. Plates 65 to 69. folio. From *Subscribers*.

Brown, B. B. Meteorological Observations for the years 1841 to 1844, inclusive. 8vo. pamph. St. Louis, 1845. From the *Author*.

Gray, G. R. Genera of Birds. Part 19. November. Folio. London, 1845. *Audubon Fund*.

Magallotti. Lettere Scientifiche ed Erudite del Conte Lorenzo Magallotti, Gentiluomo Trattenuto. 4to. Venezia, 1740. From *A. Binney*.

Versoris, Johannes. Physica, sive circa Libros Aristotelis Philosoph. Questiones, &c. Black-letter 4to. 1489. From the *same*.

December 17, 1845.

The President in the Chair.

Dr. A. A. Gould made some verbal remarks on certain characters in the shell distinctive of *Lottia* and *Patella*.

In the genus *Lottia* of Gray, (*Patelloidea*, Quoy,) we have a remarkable instance, where animals, differing widely in the arrangement of their respiratory organs, have, so far as hitherto observed, an entire similarity of shells. So much so, that M. Quoy, who described the animal, says that it is absolutely impossible to distinguish the shell from that of *Patella;* and also, that here is a marked exception to the general rule, that an animal having the respiratory apparatus non-symmetrical will have a non-symmetrical shell.

By a careful examination of several well established species, and numerous individuals, of this genus, Dr. G. thinks he has detected a character which will nullify both the above remarks, and enable us, by the shell alone, to distinguish the two genera in the majority of cases.

If we examine the anterior portion of the shell, corresponding to the left side of the animal, we shall find a faint groove or undulation passing, in direct continuation of the lateral margin of the cervical portion of the muscular impression, to the margin of the shell, thus taking nearly the diagonal line of the shell from its apex. This is quite decided in *L. gigantea*, Gray, *L. testudinaria*, *L.*, and in our own *L. testudinalis*, Mull. But in other species it is detected with difficulty, sometimes merely by the play of light as the shell is turned horizontally around. Nothing of the kind, whether distinct or faint, will ever be found corresponding to it on the opposite side ; nor is it found in any species of true *Patella* that Dr. G. has yet examined. In some specimens, and probably in some species, this groove may not be visible ; but wherever it is discovered, the shell may safely be referred to the genus *Lottia.*

To constitute this a perfectly satisfactory diagnostic mark, we ought to be able to refer to some organ of the body as its cause, as we can for the groove in *Siphonaria.* But the branchial plume is here on the opposite side ; and there is no organ, so far as Dr. G. has learnt, which corresponds to this mark ; and while we cannot yet account for it on anatomical grounds, yet its presence is too constant to be regarded as merely accidental.

Mr. J. E. Teschemacher exhibited three specimens of ferns, from the Sandwich Islands, of the genus *Depairia* of Hooker, and made the following observations.

This very curious and elegant genus of ferns, bearing its delicate pateriform sori on the margin of the leaf, was first separated as a genus by Hooker, in Hooker & Greville, Icon. Filicum, where in tab. 154, *D. Macrei* is beautifully figured. Kaulfuss, in his Enum. Filicum, p. 225, had previously arranged a proliferous *Depairia* with *Dicksonia*, as *Dicksonia prolifera*, but the fructification differs too essentially from *Dicksonia* to permit this arrangement. From *Cibotium* also, with which Presl has joined it, the habit and fructification differ. *Depairia* of Hooker will therefore probably remain a good genus. In the Species Filicum of Hooker now in course of publication, he transfers the specific name *prolifera* to his *D. Macrei*, which he calls a synonym, and states that " Kaulfuss, who first describes this handsome plant, observes that its rachis 'is proliferous, which is not apparent in my specimens.' " He also describes a new species, *D. Mathewsii*.

It is evident, however, from the specimens now exhibited, that *D. Macrei* and *D. prolifera* are by no means synonyms. This genus would then consist of 1, *D. Macrei*, as described by Hooker; 2, *D. prolifera* [*Dicksonia prolifera* of Kaulfuss] which may be described, Frond bi ?-pinnate, rachis proliferous, not glabrous, pinnæ opposite, elongate, acuminate, deeply pinnatifid, quite approximate, segments lanceolate acuminate, veins both simple and forked, those at the base of the frond nearly all forked, sori at the termination of the forked veins, usually on the uppermost, but rarely on both veins. The whole outline and appearance quite distinct from either of the other species. It seems probable that a microscopic examination of living specimens would exhibit other striking distinctions between these three species, the evidence of which, in dried specimens, is not sufficiently marked to direct a mature judgment. Thus the sori appear more sessile in *D. prolifera* than in *D. Macrei*. The rachis also of *D. prolifera* is now partially covered with sporules, so as to give it a rufous appearance; they could not, however, attach themselves thus, if the rachis was like that of *D. Macrei*, glabrous.

3. *D. Mathewsii* as described by Hooker. Mr. T.'s specimen of this species is from the mountain Punkohala Waioli.

Dr. Cabot, in behalf of Dr. Storer, exhibited a drawing of *Trichiurus lepturus*, taken from a specimen 40 inches

in length ; the only perfect specimen which Dr. S. has seen from the waters of Massachusetts Bay.

ADDITIONS TO THE LIBRARY.

Frémont, J. C. Capt. U. S. Army. Report of the Exploring Expedition to the Rocky Mountains in the year 1842 ; and to Oregon and North California in 1843 and 1844. 8vo. Washington, 1845. From the Hon. *R. C. Winthrop.*

Johnson, Walter R. Report on the Coals of the United States. Duplicate. 8vo. Washington, 1845. From *Hon. R. Choate.*

Valenciennes, M. A. Observation d'une espéce de ver de la cavité abdominale d'un lézard vert-piqueté, le *Dithyridium lacertæ.* Comptes Rendus. Sept. 1844. Pamphlet, 8vo. From *J. E. De Kay, M. D.,* of New York.

Valenciennes, M. A. Nouvelles Observations sur l'organe électrique du *Silure électrique,* (*Malopterus electricus,* Lacepéde.) Comptes Rendus, Août, 1844. From *same.*

Valenciennes, M. A. Description de quelques dents fossils de Poissons. 4to. pamph. 1844. From *same.*

Valenciennes, M. A. Nouvelles Recherches anatomiques sur *Le Nautile* (*Nautilus pompilius*) Comptes Rendus. Jan. 1841. 4to. pamph. From *same.*

Valenciennes, M. A. Récherches sur la Structure et la Nature du Tissu Elémentaire des Cartilages. 4to pamph. Nov. 1844. From *same.*

Valenciennes, M. A. Observations sur les machoires Fossiles des Couches oölithiques de Stonesfield, nommées *Didelphis Prevostii* et *Didelphis Bucklandi.* Pamph. 4to. Comptes Rendus. Sept. 1838. From *same.*

Valenciennes, M. A. Memoire sur le genre " *Ictides,*" etc. etc. An. des. Sc. Nat. 1825. 8vo. pamph. From *same.*

Microscopical Journal and Structural Record, for 1841 and 1842. Edited by Daniel Cooper, M. D., &c. 2 vols. 8vo. London. *Courtis Fund.*

Proceedings of the Academy of Natural Sciences of Philadelphia, from May to October, 1845. 8vo.

Proceedings of the American Philosophical Society, from May to August, 1845. 8vo.

DONATIONS TO THE CABINET.

Ammonite from the lias of England, fine specimen. From *Nathaniel Brewer*, Esq.

January 7, 1846.

Dr. A. A. Gould in the Chair.

Mr. Francis Alger exhibited certain minerals, and read a paper concerning them, which was referred to the Publishing Committee. The following is an abstract of it.

Mr. Alger announced that he had discovered *Phacolite* among specimens of minerals from New York Island. The crystals are beautifully perfect, double six-sided pyramids, implanted on carbonate of lime. They are of a wax-yellow color, have also a waxy lustre, and are translucent. This mineral, he observed, had been regarded by some as a species distinct from Chabasite, but it is now, principally on the authority of Tamnau, of Berlin, admitted to be only a variety of that mineral, derived from the same primary rhombohedron. Mr. A. remarked that the New York crystals were very interesting, from the fact that they showed the incipient modifications by which the ultimate double six-sided pyramids were produced from the rhombohedron, thereby clearly proving the Phacolite to be a secondary to the primary form of Chabasite. This he had not observed in any of the specimens from Bohemia or Ireland. It should nevertheless be remembered that the analyses of Phacolite, by Anderson and Rammelsberg, make it differ somewhat from common Chabasite, one being a bisilicate of alumina, + bisilicate of lime, potash and soda, + six atoms water; the other, a tersilicate of the first term, and a simple silicate of the second, along with three atoms water.

Yttro-cerite. Mr. A. had found this very rare mineral in the limestone from Orange county, New York. It presents all the characters of the mineral from Finbo, in Sweden, and cannot be

distinguished from it in hand specimens. It is associated with Brucite, but is very scarce. Mr. A. gave his reasons for considering *Dysluite* as identical with *Automalite*. They pass into each other, and the differences in hardness, color, specific gravity and pyrognostic characters, can thus be accounted for by the well-known fact of the isomorphous replacement of the constituents of certain minerals, the crystalline forms of which remain the same. Specimens are seen, in which the bright and perfect crystals of Automalite gradually lose their lustre, and become porous, brittle and soft; thus assuming the characters of Dysluite.

Ottrelite, of MM. Desclozeaux and Damour, identical with *Phyllite*, of Dr. Thomson. This fact was pointed out by Mr. A. on the grounds of similarity in chemical composition, as well as in physical and crystallographical characters, so far as these latter have been determined. They both occur in small disks or plates, very thin, and the most perfect of them having the form of compressed or flattened rhomboidal tables. A specimen of Ottrelite, which he had received from Mr. Markoe, and another of Phyllite, from the hands of Prof. Nuttall, enabled Mr. A. to compare them carefully with each other; and he had no hesitation in declaring them to be the same mineral. Damour's analysis shows the iron to be in the state of protoxide; and it, probably, exists in the same state in Phyllite, though it is put down as peroxide in Dr. Thomson's analysis. The name Ottrelite should give place to that of Phyllite, on the ground of the priority of the latter, and because it expresses so well the ordinary appearance of the mineral. Brooke had supposed Phyllite to be identical with Gigantholite. If we compare the analyses of Gigantholite and Ottrelite, their identity is much more clearly shown, so that it would appear that all three should be classed together.

Polyadelphite. Mr. A. remarked that Dana, in the new edition of his mineralogy, had included this mineral under the species garnet. The correctness of his opinion was now further shown by the circumstances of its occurrence at the locality which Mr. A. had visited the last year. The two minerals occur together, and pass into each other, in the same manner as Dysluite and Automalite. It differs but little in composition, compared with the brown garnet from Franklin, analyzed both by Dr. Thomson and Seybert.

In a former number of these Proceedings, an abstract is given of a paper read before the Society, by Mr. Alger, on the Identity of *Beaumontite* and *Lincolnite* with Heulandite. The identity of the first with Heulandite is not now disputed; but Prof. Hitchcock having maintained that the crystals in Mr. Alger's possession were, possibly, not the mineral which he (Prof. H.) had called Lincolnite, but might be Heulandite, Mr. Alger reaffirmed his first opinion, and gave additional reasons for its correctness.

Dr. S. Cabot, Jr., stated that he had recently received a pair of canvass-back ducks, shot near Newburyport. He had known only one previous instance of these birds being taken in this vicinity, to wit, at Fresh Pond, by Capt. N. J. Wyeth.

DONATIONS TO THE CABINET.

Specimens of Bulimus ovatus, B. planidens, Helix similaris, and others, from the Organ Mountains, near Rio Janeiro. From Mrs. *Alexander H. Everett.*

ADDITIONS TO THE LIBRARY.

Sullivant, W. S. Musci Alleghanienses. 12mo. pamph. Columbus, Ohio, 1845. From *Prof. Asa Gray.*

Gray, Asa. Review of the above work. From the *same.*

Leonhard, Gustav. Handwörterbuch der Topographischen Mineralogie. 8vo. Heidelberg, 1843. From *Francis Alger.*

Phillips, John. Memoirs of William Smith, LL. D. 8vo. London, 1844. From the *same.*

Silliman, B., Jr. Report on the Chemical Examination of several Waters for the City of Boston. 8vo pamph. Boston, 1845. From the *Author.*

Verhandlungen der Kaiserlichen Russischen Mineralogischen Gesellschaft. 8vo. 3 pamphlets. St. Petersburg, 1842, 1843 and 1844. From the *Imperial Mineralogical Society of St. Petersburg.*

January 21, 1846.

The President in the Chair.

Rev. Edward E. Hale gave a short account of the recent Journey of Discovery under the command of Capt. Frémont, and of its scientific results, which he considered to possess extraordinary interest.

Capt. Frémont's party, consisting of thirty-nine men, left Kansas, a frontier village of Missouri, on the 31st of May, 1843. Varying from the route of the year before, and that pursued by the emigrants, they advanced towards the Rocky Mountains by the Republican Fork of the Platte River. Appointing a rendezvous at St. Vrain's, Lieut. Frémont and a light party made a detour of a hundred miles to the southward, hoping to find a more southerly pass through the eastern ridge of the mountains, than that usually followed.

In this expectation he was disappointed. Having collected his whole party again, they continued westward, across the Laramie plains, by a new route ; and, by another detour, he, with a light party, visited the Great Salt Lake, a saturated solution of salt, on which he and his crew were probably the first navigators. He rejoined his party at Hall's, on the Snake River, and thence followed very nearly the great emigrant road to the mouth of the Columbia. This road is now marked out with perfect distinctness, and is constantly travelled. From the Columbia, he undertook, in mid winter, to travel south to California : not near the sea coast, as a party under Mr. Eld, of the Exploring Expedition, had done, but eastward of the Cascade chain of mountains, and between one and two hundred miles from the coast. His objects were to visit St. Mary's Lake, to find the great rivers Sacramento and Buenaventura, which are laid down, on the maps, as draining all northern Mexico and southern Oregon.

This bold and dangerous portion of his journey establishes a very important geographical fact. No such rivers exist as the Sacramento and Buenaventura of the maps. They drain only a district lying near the coast, while the greater part of the north of Mexico and the south of Oregon is not drained by waters running into the Pacific. The Columbia is the only river which

breaks the Cascade chain of mountains, for a long distance on the Pacific coast. For twelve degrees south of its mouth, no river flows into the ocean but those which rise on the west side of these mountains, the range of which thus connects, without interruption, with the Sierra Nevada of California.

Capt. Frémont was unable, therefore, to follow a watercourse to the Pacific, as he had hoped, and instead of this, was compelled to cross with his whole party the high range of this Sierra, in mid winter. He effected this between January 19th and March 6th, without losing a man. The lowest point of the pass which he followed, is nearly eight thousand feet above the sea. His Indian guides thought the undertaking madness, and all deserted him successively. As his provisions were failing also, it may be considered as a most daring and triumphant effort.

He refitted at Nueva Helvetia, travelled southwards till he could turn, by Walker's pass, the southern flank of this range of the Sierra, then, by the Spanish caravan trail, worked his way northeasterly again, until near the Salt Lake, whose southern waters he visited, and thence returned home by the waters of the Smoky Hill Fork, making a survey of the head waters of the great rivers of the Mississippi, as he passed. He arrived at Kansas again, July 31st, 1844.

The distance thus travelled on horseback, with a few light wagons for instruments, and a mountain howitzer, was five thousand one hundred and nine miles.

The geographical discovery, the principal feature of which has been noticed, is, undoubtedly, the most valuable scientific result of the expedition. From the time when he left the Salt Lake, till he returned to it, he was travelling around the three sides of a triangle whose area is some two hundred thousand square miles. Of this district little is known, though the hunters and trappers give terrible accounts of its sterility. But Capt. Frémont, in travelling wholly around it, proved that its waters do not discharge from it in any direction into the ocean. For he traced the ranges of mountains which separate it from the Mississippi, the Colorado, the Columbia and the Sacramento.

This basin presents some analogy, therefore, with that of the Caspian Sea in Asia. It may possibly prove that the Salt Lake is the result of its system of rivers.

The older maps have laid down the fact that here were lakes and streams not communicating with the sea. But the full limits of this mediterranean desert have never before been known.

Capt. Frémont is a botanist, and speaks with becoming enthusiasm of the vegetable wonders of western America. Unfortunately, a great part of his collections was lost or injured. The remnant has been carefully arranged by Dr. Gray, who has published, in the Journal of this Society, a Conspectus of the Compositæ, prepared by himself and Prof. Torrey.

Referring in general to the Report for descriptions of botanical novelties, it is worthy of attention that Capt. Frémont describes five esculent roots and plants, used by the natives, and as yet wholly unknown in our gardens. These are : *Psoralea esculenta*, *Valeriana edulis*, *Camassia esculenta*, *Circium Virginianum*, *Erodium cicutarium ;* besides the root of *Anethum graveolens*, which, it seems, is the *yampah* of the Indians. The Digging Indians, who seem to be at the lowest limit of civilization, subsist almost wholly on these and on worms ; and Capt. Frémont and his men were at times glad to follow their example, adding, in one instance, *red ants*, which, it seems, give a pleasant acid relish.

The work contains, also, important contributions to the zoölogy of the country, especially in enlarging our knowledge of the history and migrations of the buffalo, and its present numerical condition. There are also frequent notices of the mountain sheep, and other animals, as yet but little known.

The volcanic nature of a great part of Oregon, and the numerous and interesting fossils discovered, give an important character to the geological results of the expedition. Hot springs are mentioned in several instances. One, in California, had at the surface a temperature of 209° in mid winter.

The whole book is written with spirit, and it is highly entertaining. Capt. Frémont shows himself, with all modesty, to be a daring and intelligent man.

Prof. Asa Gray stated that there had been recently placed in his hands specimens of earthy matter, filled with finely broken fragments of branches of trees, which were said to have been found occupying the place of the stomach in the skeleton of the *Mastodon* exhumed on Schooley's Mountain,

N. J., and lately exhibited in this city. As similar observations are said to have been made in several instances, Prof. Gray was induced to examine the substances brought to him.

The wood evidently consisted of branchlets of one, two and three years old, broken, quite uniformly, into bits of half an inch or so in length, with only, now and then, traces of the bark remaining on the wood. The wood was not at all fossilized, and was but slightly decayed. From the appearance of the branchlets examined, Prof. Gray inferred that they belonged to some coniferous tree or shrub, and, probably, to a kind of spruce or fir, rather than to a true pine. This inference was borne out by the examination of thin slices of the wood by the microscope. The woody fibre was very beautifully and distinctly marked with the circular discs that are characteristic of all coniferous wood. The structure agreed quite perfectly with that in similar branchlets of the common hemlock spruce.

Dr. S. Cabot remarked upon the internal organization of a male specimen of *Fuligula spectabilis,* lately procured by him in Boston market.

Dr. C. mentioned some external appearances, which have not been described in the accounts heretofore given of this bird. The color of the legs and toes is bright yellow (not orange.) Two of the inner tertiaries are deeply scooped out, as it were, on their extremities, and seem inclined to stand up, on their edges, from a twist in their shafts, somewhat like those of the Mandarin duck.

The superior larynx is $\frac{7}{8}$ of an inch long, by $\frac{4}{8}$ across. The trachea is $7\frac{6}{8}$ inches in length, to the bifurcation of the bronchial tubes. At the lower end of the trachea, is a rounded bony box, $\frac{13}{16}$ of an inch in its transverse diameter, and $\frac{5}{16}$ in its perpendicular diameter on the left or largest side. The left bronchus is $1\frac{7}{8}$ inches long, and considerably dilated in its central parts. The right bronchus is $1\frac{6}{8}$ inches long, calibre equal throughout. The whole length of the alimentary canal is 86 inches. Half way between gizzard and anus, there was found a small appendix, $\frac{3}{8}$ of

an inch in length, and $\frac{2}{5}$ of an inch in width when flattened out, entering the intestine at a right angle, and communicating with it by an orifice somewhat smaller than the calibre of the appendix itself. The cœcal appendices were about $6\frac{1}{2}$ inches in length. The gizzard was very large and strong, being $2\frac{3}{8}$ inches in its longest diameter, and having muscles 1 inch in thickness; it contained fragments of shells broken into small pieces; its lining membrane was very tough and hard, being $\frac{1}{5}$ of an inch in thickness.

DONATIONS TO THE CABINET.

Numerous specimens of minerals and fossils, collected in Col. Kearney's Expedition in the Territory at the eastern base of the Rocky Mountains. From *Lt. J. H. Carlton, U. S. Dragoons*, and *Mr. Henry Loring, Jr.*

ADDITIONS TO THE LIBRARY.

American Journal of Science and Arts. Second Series, No. 1. Jan., 1846. From the *Editors.*

Magazine of Horticulture. For Jan., 1846. From the *Editors.*

February 4, 1846.

The President in the Chair.

The President read a letter from George Lister, M. D., of Washington county, Alabama, concerning the fossil bones collected there by Dr. Koch, and since exhibited in this and other cities, as the remains of an extinct animal, under the name of *Hydrarchos.* The circumstances which elicited this letter, were as follow. It was stated, by Dr. Koch, that the bones had been found together, in a position which proved that they belonged to one individual, and that the vertebræ formed a complete and integral series, arranged in the order in which they were lying when discovered. This

assertion was shown, by Prof. Wyman, in a paper read before this Society, to be a mere fabrication, and the condition and character of the various bones were cited as evidence that they could not have belonged to one individual, and that their arrangement was entirely factitious. Of this, there could be no doubt among persons competent to form a correct opinion, but, as it was desirable to know how far Prof. Wyman's judgment was confirmed by the history of the discovery of the fossils themselves, Dr. Lister, a gentleman living near the locality of Dr. Koch's discoveries, was applied to for information. His reply was put into the hands of the President, and Dr. Lister had authorized such use to be made of it as might be useful.

Dr. Lister's letter is dated Old Court House, Washington county, Alabama, December 7th, 1845. The writer states that there is a tract of fertile woodland prairie, with a black soil, extending from Mississippi, in a southeast direction, through Alabama. Its whole length is about one hundred and fifteen miles. It is covered, here and there, in many places, by sharks' teeth, marine shells, and the bones of aquatic animals, all of which are evidences of a deposit, made at the bottom of an estuary or arm of the sea. Such bones as those of the Hydrarchos, and particularly the vertebræ, can be collected in great numbers by any one who will take the trouble, as Dr. Koch did, to hunt out the various parts; but it is very uncommon, and almost impossible, to discover the bones of one individual, or any considerable part of them, in their natural arrangement.

It was in this prairie, near the Old Court House, in Washington county, that Dr. Koch found a considerable portion of the bones now constituting the Hydrarchos, lying upon, or near, the surface of the earth. They were not lying in their natural position, so as to constitute an unbroken series, but were scattered here and there. Some days after finding some of the bones of the anterior extremities, and some ribs and vertebræ, he went into the State of Mississippi, hoping to discover a cranium. In this he was unsuccessful; but after his return, he found the bone supposed by him to be a cranium, and the lower jaw, in a heap of stones,

where they had been thrown by the negroes when the land was cleared for cultivation. He also procured others of the bones in Clark county, at a place twenty miles distant, and some wagon-loads of them at another place seven miles distant from the spot where he got the most interesting part of them.

Dr. Lister was not present at the actual exhumation of the bones; but, on the invitation of Dr. Koch, he examined them at the Court House, and saw enough to convince him that Dr. Koch could have made his skeleton three hundred feet long, as easily as one hundred and fourteen feet.

Dr. Lister adds that the people of his neighborhood had been very much amused by the accounts of the wonderful animal which had appeared in the New York newspapers, and by the various opinions which had been pronounced upon it by learned gentlemen.

A letter, addressed to the President by Mr. John Bartlett, now engaged in a zoölogical exploration in the south-western States, dated Natchez, January 10, 1846, was read.

Mr. Bartlett said that he had received authentic information that the bones of *Zeuglodon* are found near Natchez, in a blue clay of the tertiary beds. He had seen, in the possession of C. G. Forshey, Esq., of Vidalia, La., vertebræ of the same animal, procured from a stratum of marl, among the older tertiary beds of Ouachita Bluff, eighty feet above the level of Ouachita River. The shells associated with them, at the last-mentioned locality, are, *Ostrea*, *Pecten*, *Isocardia*, *Fissurella*, and *Dentalium*. This observation seems to confirm the original opinion of Dr. Harlan, that the *Zeuglodon* belonged to the tertiary era, an opinion that has been latterly superseded by the belief that its remains were derived from the cretaceous strata. It is probable that its supposed position in the latter, rather than its zoölogical affinities, led Dr. Harlan to consider it to be a saurian, and not a cetacean, as it is now acknowledged to be.

Dr. N. B. Shurtleff informed the Society that the splendid and most valuable skeleton of *Mastodon giganteum*, exhumed in August, 1845, from a marl-pit, six miles west of Newburg, Orange county, New York, had arrived in the

city. He knew that the members, and all friendsof science would be gratified to learn that it had been purchased by a scientific gentleman, with a view of giving it a permanent place among us. By the liberality of the proprietor, it would be accessible to naturalists for scientific purposes, and would always constitute an object of great scientific interest. This munificent purchase enabled us to claim for Boston the honor of possessing the two most perfect and the only authentic integral skeletons of the Mastodon. The one, a female, the subject of Dr. J. B. S. Jackson's notice, on pp. 60–62 of this volume, soon to be placed in the halls of Harvard College, and the other, a male, now in preparation for its owner. Dr. Shurtleff announced the proprietor to be Dr. John C. Warren.

Dr. S. said that it was not his intention to give a detailed description of the skeleton, as that would be done in a short time by a distinguished anatomist. He would mention, however, that its height is eleven feet, its length, in a straight line from the most anterior part of the cranium to the most posterior part of the pelvis, is fourteen feet four inches, and the extreme width of the pelvis six feet two inches. The bones are in a remarkable state of preservation, and have very nearly the appearance of recent specimens. With the exception of a few phalangeal and caudal bones, and the posterior portion of the sternum, the skeleton is entire.[1]

Dr. Shurtleff being himself engaged in articulating and mounting the skeleton, thought it might be interesting to mention the manner of doing it. The missing bones are replaced by imitations. In restoring the absent phalangeal bones, the correspondent ones of the opposite side, which fortunately were perfect, offered the means of doing so correctly, by using reversed models of them. The deficient portion of the sternum is copied from that of the Asiatic elephant belonging to the Society. The caudal vertebræ are supplied, in part by models from another

[1] A description of this skeleton is given in the American Quarterly Journal of Agriculture and Science, vol. ii. p. 203. The number of the dorsal vertebræ is there erroneously stated to be nineteen. The actual number is twenty.

skeleton, and in part by others made according to Dr. S.'s judgment. In forming the imitation-cartilages of the ribs, Dr. S. attached *six* of them to the sternum, that being the number of true ribs in the Society's skeleton of the elephant, and the inference being a fair one that, the number of dorsal vertebræ and ribs being the same in the Mastodon and elephant, the number of true ribs would also correspond.

The skeleton is to be placed on a platform in the shape of a double cross, and to be supported by strong iron rods, arranged so as to be nearly out of sight when the skeleton is viewed laterally: viz., the anterior part of the chest by a rod in the shape of an inverted Π between the anterior extremities, to which each of these is attached by a clamp; while its weight is sustained by an iron T secured to the carpus; and the posterior part of the trunk by iron bars crossing each other in the shape of an X, and attached above by bolts to the lower part of the pelvis, and below to the cross. Each posterior extremity is sustained in position by an iron T screwed to the tarsal bones, while the head of the femur is secured in the acetabulum by a strong bolt; the head is made firm by two cross bars (similar to those used for the posterior part of the skeleton,) attached above to the most anterior part of the cranium, and below to the platform and between the fore feet. Two other rods, placed longitudinally, are arranged so as to serve as braces.

In mounting this skeleton, every exaggeration has been studiously avoided, it having been the endeavor of Dr. S. to put the bones as nearly as possible in their natural position as indicated by their articulating surfaces and by analogies.

Dr. S. also mentioned that the skeleton of the largest Asiatic elephant hitherto brought to this country, would soon be mounted, and remain permanently in the city.

Dr. Gould exhibited a collection of shells, sent from Tavoy, in Burmah, by the Rev. Mr. Mason. Among them he distinguished and characterized the following undescribed species:

Helix saturnia. Testa magna, lenticularis, pallidè rubido-cornea, ad peripheriam costato-carinata, latè et profundè umbilicata: anfr. 5 planulatis, spirâ depresso-conicâ, suturâ prof[illegible]dâ,

marginatâ : subtus convexa, costulis obsoletis cincta : aperturâ amplâ, rhomboideâ, peristomate revoluto.

Diam. 2 ; alt. $1\frac{1}{4}$ poll. Hab. Tavoy.

In size and form it is like H. *lampas* from Jamaica ; but differs especially in having a broad, deep umbilicus.

Helix refuga. Testa sinistrorsa, discoidea, supra plana, infra concava, viridi-cornea : anfr. 6 arctè volutis, confertim striatis, ultimo propè aperturam deflexo ; suturâ impressâ : aperturâ perobliquâ, subcordiformi, peristomate albo, reflexo, callo sinuoso connexo ; fauce lamellâ albâ, flexuosâ, ad anfractum penultimum volvente.

Diam. $\frac{3}{5}$; alt. $\frac{1}{5}$ poll. Hab. Tavoy.

This remarkable shell is almost exactly like H. *carabinata*, Fer., except that it is reversed, and has no lamellæ revolving within the outer lip.

Helix honesta. Testa orbicularis, depressa, subcarinata, tenuis, nitida, submargaritacea, straminea vel albida, sub-perforata, subtus lineis subtilibus volventibus striata : anfr. 5 convexis ; sutura lineari, marginata : apertura lunata, labro simplici, acutissimo, ad umbilicum reflexo.

Diam. $\frac{9}{20}$; alt. $\frac{1}{4}$ poll. Hab. Tavoy.

A plain, simple shell, resembling H. *fusca* more than any other species I have seen. It is, probably, a Nanina.

Bulimus moniliferus. Testa conico-oblongata, plerumque sinistrorsa, lævis, luteo-cinerea, flammulis longitudinalibus, fasciâ suturali lineari, et fasciâ subsuturali interruptâ fuscis ; regione umbilicali fuscâ, fasciâ luteâ divisâ : anfr. 7, ultimo subcarinato ; aperturâ subovatâ, basi angulatâ, sub-effusâ ; labro reflexo, rubro-purpureo, ad columellam dilatato ; fauce purpureâ.

Long. $1\frac{1}{3}$; lat. $\frac{7}{10}$ poll. Hab. Tavoy.

Differs from B. *contrarius* and B. *lævus*, Mull., by its angular aperture, and the color of its lip and throat. The interrupted line, just in front of the suture, exists in all the specimens I have seen. It does not always occur reversed.

Pupa mellita. Testa parva, subfusiformis, pellucida, nitida, straminea, apice obtusa : anfr. 7 convexis ; suturâ impressâ, denticulatâ : apertura ampla, subquadrata, plicâ columellari, plicâ basali, plicâ labiali et lamellâ posteriori ringens : peritremate undulatâ, reflexâ, albâ.

Long. $\frac{9}{40}$; lat. $\frac{3}{40}$ poll. Hab. Tavoy, in hortis.

The general aspect of the shell is not unlike that of *Achatina octona*, in company with which it was found.

Succinea semiserica. Testa fragilis, ovalis, a tergo depressa, posticè straminea, anticè albido-sericea, longitudinaliter plicoso-striata: anfr. $2\frac{1}{2}$, ultimo maximo; aperturâ ovatâ, patulâ faciem inferiorem ferè adequante.

Long. $\frac{1}{2}$; lat. $\frac{3}{10}$; alt. $\frac{3}{20}$ poll. Hab. Tavoy, in hortis.

Its shape is like S. *tigrina*, Fer., and it is well characterized by the peculiar silky-white or pearly surface of the anterior half of the shell.

Melania Herculea. Testa ponderosa, elongato-conica, fusco-viridis, decollata: anfr., numero integro ad 15, superstitibus 2–5, planulatis, infra suturam constrictis, plicis profundis 4-nodosis longitudinalibus; ultimo subcarinato, basi striis crassis cincto: apertura subrhomboidali, anticè productâ, callo columellari rotundato, crasso, fauce plus minusve fusco.

Long. 3 poll.; lat. 1 poll. Hab. Tavoy River.

This is the largest Melania with which I am acquainted, and is very massive. It differs from the large Melania found about Calcutta (of which, also, I am unable to find any description,) by its larger size, darker color, more numerous folds, which bear about four tubercles each, instead of having usually only a median carina bearing acute tubercles.

Amnicola cincta. Testa minuta, tenuis, ovato-oblongata, imperforata, pallidè cornea, decollata: anfr. (superstitibus) 3, ventricosis, ultimo magno, subcarinato, lineis volventibus, et interdum fasciâ fuscâ, cincto: apertura ovata, basi admodum producta, labro simplici.

Long. haud $\frac{1}{10}$ poll. Hab. fluv. Tenasserim, Burmah.

Nucula turgida. Testa alba (dealbata,) sub-equilateralis, subrhomboidea, posticè acuta, anticè rotundata, ventricosa, margine ventrali pendente, ubique lamellis concentricis obtusis reflexis confertis ornata: natibus prominentibus; cardine dentibus 21 utroque latere instructâ.

Long. $\frac{1}{2}$; lat. $\frac{1}{4}$; alt. $\frac{7}{20}$ poll. Hab.

This must resemble closely N. *tumida*, Reeve, but is in no wise angular anteriorly.

Dr. Gould also described a species of Bulimus, from the Organ Mountains, Brazil, lately presented to the Society by Mrs. A. H. Everett.

Bulimus turnix. Testa oblongo-ovata, a tergo compressa, nitida, cervina, flammulis albidis quodammodo seriatis marmorata, longitudinaliter striata, lineis granulosis volventibus decussata: anfr. 5 convexis, ultimo magno: apertura ovali, peristomate valdè revoluto, rosaceo: columellâ obliquâ, pliciformi: umbilico obliquo, rimato.

Long. $2\frac{1}{5}$; lat. $\frac{11}{10} \times \frac{9}{10}$; apert. $1\frac{3}{10}$ poll.

Its surface is covered with shining, longitudinally compressed granules, like *B. goniostoma*, and evidently belongs to the same group; but, in other respects, it is more like *B. pudicus* and *B. Bolivarii*. Few exceed it in beauty.

Information having been received that the authorized edition of the scientific portion of the history of the late U. S. Exploring Expedition would consist of only one hundred copies, a number entirely inadequate to supply the wants of the scientific public; it was

Voted, That the interests of science require that an effort should be made to induce the Government to enlarge the edition very considerably, so that the work may be procured by institutions and individuals, other than those to whom copies may be presented by law; and Dr. A. A. Gould and Dr. Samuel Cabot, Jr., were appointed a committee to address the proper authorities in this behalf.

J. H. Carlton, Lt. U. S. Army, was elected a corresponding member, and Mr. Henry Loring, Jr., of Boston, a member of the Society.

ADDITIONS TO THE LIBRARY.

Annual Report of the Kentucky Institution for the Deaf and Dumb. 1846. *Donor unknown.*

Morris, J. E. Contributions towards a History of Entomology in the United States. 8vo pamph. Washington, 1844. From the *Author*.

February 18, 1846.

The President in the Chair.

A letter from J. G. Norwood, M. D., of Madison, Indiana, communicated by Prof. H. D. Rogers, was read.

Dr. Norwood announced the discovery of fossil fishes, at a locality sixteen miles north of Madison. They are, probably, of the genus *Cephalaspis*. He believes them to be the first fossils of the kind found in the west, and hopes that they may aid in determining the western equivalents of eastern and foreign formations. He expressed an intention of publishing a description of the fossils and of their position.

A letter from W. H. Barris, of Ellsworth, Trumbull county, Ohio, was read. It accompanied a crystal (hemitrope) of Selenite, found, imbedded in a stratum of blue clay, in that vicinity.

A paper was read, communicated by Prof. C. B. Adams, containing descriptions of undescribed species of shells, from the island of Jamaica, viz.,

Planorbis pallidus. P. t. dextrâ convexâ, apice depressâ, sinistrâ, concavâ ; anfractibus vix tribus, ultimo maximo ; aperturâ maximâ, transversâ.

Diam. .4 ; alt. .125 poll. Hab. Jamaica.

Cyclostoma maritimum. C. t. elongatâ, decollatâ, aurantiâ, costulis exilibus plurimis eleganter ornatâ ; suturâ exilè crenulatâ ; anfractibus duobus perditis, septem reliquis ; umbilico minimo ; aperturâ ab anfractu penultimo disjunctâ, suprà angulatâ et auriculatâ ; labro acuto.

Div. 30°. Alt. .63 ; lat. .27 poll. Hab. Jamaica.

Helicina affinis. *H. solitariæ*, nob., affinis, sed t. spirâ conicâ haud convexâ, instructâ ; labro reflexo, infrà angulato, haud scisso. Hab. Jamaica.

Pupa rosea. *P. cylindro*, Desh., affinis, sed t. rosaceâ, costulis parvulis distantibus ornatâ. Hab. Jamaica.

LIMA PELLUCIDA. L. t. tenuissimâ, hyalinâ, costulis quadraginta tenuissimis instructâ.

Long. .41; alt. .63; lat. .25 poll. *L. Loscombii*, Sowb., affinis. Hab. Jamaica.

Dr. Gould read a letter from Prof. James Hall, announcing that he had in his possession a fossil skull of a large *Rodent*, found in Wayne county, New York, which he proposed to describe and offer the description to this Society.

Dr. D. H. Storer laid upon the table a Synopsis of the Fishes of the State of Ohio, prepared from the papers of Prof. J. P. Kirtland, published in the Journal of this Society.

Dr. S. remarked that, as this series of descriptions is now completed, it had become desirable to know their results, and these he had endeavored to exhibit in the paper now offered. Besides being a synopsis of the families, genera and species of the fishes of that State, so far as they are at present known, he had given to it the character of an index, by appending to it a reference to the volume and page of the Journal where the description of each species may be found. He hoped thus to abridge the labors of the student, who would otherwise be obliged to extend his search through eleven different numbers of the Journal.

	Vol.	Page.	Plate.	Fig.
PERCIDÆ.				
Perca flavéscens,	V.	335.	XXVII.	2.
Etheóstoma variàta,	III.	274.	"	"
" maculàta.	"	276.	"	3.
" capròdes,	"	346.	V.	3.
" blenniòides,	"	348.	VI.	1.
Labrax multilineàtus,	V.	21.	VII.	1.
Lucioperca americàna,	IV.	237.	IX.	2.
Centrárchus hexacánthus,	III.	480.	XXIX.	2.
" æneus,	IV.	239.	XI.	1.
" fasciàtus,	V.	28.	IX.	1.
Pomòtis macrochìra,	III.	469.	XXVII.	3.
" vulgàris,	"	470.	XXVIII.	2.
" nítida.	"	472.	XXVIII.	1.
TRIGLIDÆ.				
Cottus gòbio,	V.	342.		
Gasterósteus incónstans,	III.	273.	II.	1.
SCIENIDÆ.				
Corvína óscula,	III.	350.	VI.	3.

	Vol.	Page.	Plate.	Fig.
SILURIDÆ.				
Pimelòdus nebulòsus,	V.	330.	XXVI.	
" cùpreus,	"	339.	XXIX.	2.
" cœruléscens,	"	333.	XXVII.	1.
" limòsus,	"	340.	XXIX.	3.
Notùrus flavus,	"	332.	XXVI.	2.
CYPRINIDÆ.				
Leucíscus elongàtus,	III.	339.	IV.	1.
" dissímilis,	"	341.	IV.	2.
" biguttàtus,	"	344.	V.	1.
" céphalus,	"	345.	"	2.
" erythrogáster,	IV.	23.	II.	2.
" crysolèucas,	"	305.	XV.	1.
" compréssus,	"	306.	"	2.
" plagyrus,	V.	26.	VIII.	2.
" kentuckiénsis,	"	27.	"	3.
" Storeriànus,	"	30.	IX.	2.
" dorsàlis,	"	274.	XXII.	1.
" diplèmia,	"	276.	"	3.
Piméphales pròmelas,	III.	475.	XXVII.	2.
Catòstomus aurèolus,	III.	349.	VI.	2.
" commùnis,	V.	265.	XIX.	1.
" bùbalus,	"	266.	"	2.
" elongàtus,	"	267.	"	3.
" Duquésnii,	"	268.	XX.	1.
" anisùrus,	"	269.	"	2.
" melànops,	"	271.	"	3.
" nìgricans,	"	273.	XXI.	3.
Sclerognàthus cypriuus,	IV.	275.	XXII.	2.
Exoglóssum dùbium,	V.	272.	XXI.	1.
Hydràrgira limi,	III.	277.	II.	4.
ESOCIDÆ.				
Esox reticulàtus,	IV.	233.	X.	2.
" estor,	V.	337.	XXVIII.	3.
SALMONIDÆ.				
Salmo fontinàlis,	IV.	305.	XIV.	2.
" namycush,	"	25.	III.	2.
Corégonus albus,	III.	477.	XXVIII.	3.
" Artedi,	IV.	231.	IX.	1.
CLUPEIDÆ.				
[1] Pomólobus chrysochlòris,	IV.	307.	XV.	3.

[1] In revising the descriptions of the western fishes for the pages of the Journal, I placed this species under the genus *Alosa*. I had, however, never seen a recent specimen, and being therefore not quite satisfied of my correctness, I have preferred to follow Rafinesque's arrangement in my Synopsis. D. H. S.

	Vol.	Page.	Plate.	Fig.
Amia calva,	III.	479.	XXIX.	1.
Chatöéssus ellípticus,	IV.	235.	X.	1.
Hyodon tergíssus,	V.	338.	XXVIII.	1, 2.
SAURIDÆ.				
Lepisósteus oxyúrus,	IV.	16.	I.	1.
" ferox,	"	18.	"	2.
" platóstomus,	"	20.	"	3.
GADIDÆ.				
Lota maculòsa,	IV.	24.	III.	1.
ANGUILLIDÆ.				
Anguílla lùtea,	IV.	234.	XI.	2.
PETROMYZONIDÆ.				
Petromyzon argénteus,	III.	342.	IV.	3.
Ammocœtes cóncolor,	"	473.	XXVII.	1.
STURIONIDÆ.				
Acipénser rubicúndus,	IV.	303.	XIV.	1.
" platorynchus,	V.	25.	VIII.	1.
Polyodon fòlium,	IV.	21.	II.	1.
Platiróstra edéntula,	V.	22.	VII.	2.

C. G. Forshey, Esq., of Vidalia, Louisiana, was elected a Corresponding Member.

John H. Dix, M. D., and W. J. Dale, M. D., were elected Members of the Society.

ADDITIONS TO THE LIBRARY.

Proceedings of the Academy of Natural Sciences of Philadelphia. For November and December, 1845. 8vo. pp. 287 to 325. From the *Academy*.

March 4, 1846.

The President in the Chair.

Dr. D. H. Storer made a verbal statement concerning a species of *Esox* received by him, since the last meeting of

the Society, from Mr. William Henry, of Bellows Falls, N. H.

Dr. S. observed that the species is a beautiful one, and differs from the only two species of this genus he had previously seen, viz., *E. estor*, and *E. reticulatus*, but agrees *perfectly* with Richardson's description of *E. lucius*, in his Fauna Boreali-Americana, Vol. IV. p. 124. According to Mr. Henry, this species was originally introduced, from Lake Champlain, into ponds connected with Black River, Windsor Co., Vermont, and thence carried into the Connecticut River. He had known, in some seasons, one hundred or more to be taken at Bellows Falls, weighing each from one to fourteen pounds. Dr. S. remarked that, although Richardson had stated that his "specimen, taken in Lake Huron, was submitted to Cuvier's inspection, and had also been carefully compared with the English pike, without any specific differences having been detected," American ichthyologists had been slow in acknowledging the two to be identical, believing the same fluviatile species not to exist on both continents. Dr. Dekay had admitted *E. lucius*, with a query, into his "Report," and he (Dr. S.) had done the same in his "Synopsis."

Dr. S. hoped to be able soon to have another specimen, when he should exhibit it to the Society and have it figured.

Dr. S. further remarked that, with all due deference to the authority of distinguished naturalists abroad, he was, each succeeding year, less willing to rely upon their opinions in matters of doubt, touching the fishes of this country, unless good reasons were given for those opinions. To illustrate his remark, he spoke of the *common smelt*. In the year 1818, Lesueur described this species, as new, in the 1st vol. of the Jour. Ac. Nat. Sc. of Philadelphia, under the name of *Osmerus viridescens*. Cuvier, in his Règne Animal, made no mention of this species; and hence Richardson observed, in his Fauna Boreali-Americana, "As Cuvier, though well acquainted with Mr. Lesueur's ichthyological papers, has not noticed this smelt in his *Règne Animal*, we may infer that he did not consider its title to rank as a species sufficiently established." Dr. S., in his Report on the Fishes of Massachusetts, had, accordingly, considered Artedi's specific name, *eperlanus*, as having the priority, there probably being but one smelt. To settle this point, he transmitted to Mr. Yarrell, the

well-known British ichthyologist, specimens of our species, and wished him carefully to compare them with the English fish. The remarks of that gentleman upon this species, which will appear in Dr. S.'s "Synopsis," show the species to be distinct from each other, and that our fish is Lesueur's *O. viridescens.*

Dr. A. A. Gould remarked upon the occurrence of *Esox lucius* in Connecticut River, as stated by Dr. Storer.

He said that he hoped that Dr. S. would give the subject a very thorough examination, before he admitted this as a fact. He had himself, after much consideration, and with favorable opportunities for observation, adopted the opinion that no fluviatile species exists both in Europe and North America. He considered the North American species to be quite distinct, and that the fish which had latterly been thought to be *Cottus gobio*, of Europe, would prove ultimately to be specifically distinct from it. Great caution should be exercised in admitting the identity of any foreign species with our own.

Mr. John E. Teschemacher read mineralogical notices of *Damourite* and *Pyrrhite,* minerals that had recently been examined by him.

Mr. T. stated that, in the Annales de Chimie for Oct., 1845, there is a paper, from M. Achille Delesse, on a new mineral found among the Kyanite of Pontivy, which he had named Damourite. It is a combination of silicate of alumina and hydrate of potash. His analysis gives :

Silica,	45.22
Alumina,	37.85
Potash,	11.20
Water,	5.25
	99.52

In the closed tube, before the blowpipe, it gives off water. This mineral appears, either during its formation or afterwards, to have undergone intense pressure.

Among the minerals from Chesterfield, Mass., which, in a paper read before this Society, and published in their Journal, Vol. IV. No. 1, Mr. T. had considered as new and requiring in-

vestigation, was a yellow amorphous substance, found in very small quantity, which gave off water in the closed tube, became milk-white before the blowpipe, and, with the strongest heat, melted at the edges into a white enamel; with microcosmic salt, gave a colorless bead, and became blue with nitrate of cobalt. As these characters agreed with those of the Damourite above, he made several trials with reägents, and found it to be a pure silicate of alumina, with a small percentage hydrate of potash. He sent a portion of it to Mr. A. A. Hayes, of Roxbury, who was kind enough to repeat the examination, with the same result. It is found in recesses of the albite, at the tourmaline locality, and appears to have undergone severe pressure.

In the Kyanite from Leiperville, Pennsylvania, there is also a yellow substance which attracted the attention of Mr. T., two or three years ago. Like the Damourite, it is pressed so hard against the Kyanite that it is scarcely possible to separate them from each other. This has also been subjected to the same trials as the other, both by Mr. Hayes and Mr. T., and with the same results. These two minerals are therefore, unquestionably, the Damourite of M. Delesse. The latter, from Leiperville, is found plentifully, although Mr. T. is not fortunate enough to possess sufficient for further analysis. The closing remarks of M. Delesse, on the early conditions of the rock in which it is found, as indicated by its analysis, are of great interest, both in themselves as well as in exhibiting the importance to geology of considerations on the absolute conditions requisite for the formation of the different minerals that are interspersed among the various formations. Knowledge on this subject, when more facts are collected and generalized, will, probably, cause considerable change in many of the theories current in the present state of science.

Mr. T. stated that, by the kindness of Dr. J. W. Webster, a further supply of Pyrrhite, an interesting mineral found in volcanic ejections at the Azores, has been placed in his hands. He had measured the orange-red octohedrons, which give 109.28′, and are therefore, as he had previously supposed, the regular octohedron. There are, however, other crystals, accompanying them, of which the forms are widely different, although, before the blowpipe, they give the same reaction with oxide of titanium as the others. The color of these crystals is also rather of a reddish

clove-brown, and they are more transparent than the orange-red octohedrons. One of these is an oblique rhombic prism, the solid lateral angles replaced. Another is probably a right rhombic prism. All these crystals, however, are very minute, and have, on this account, hitherto baffled his attempts at measurement of the angles. But under a powerful microscope all the planes are distinctly and clearly visible. Rose, in his admirable papers on titanic acid, observes that Rutile, Anatase and Brookite, all oxides of titanium, but of incompatible crystalline forms, make the first clear instance of trimorphism, so that the variety of forms observed are not extraordinary ; nay, further investigation will probably prove that the oxide of titanium may, in its crystalline form, be polymorphous.

Mr. T. thought it proper to notice that Monticelli and Covelli, in their Prodromus of the Mineralogy of Vesuvius, describe a siliceo-calcareous titanite or sphene, in the form of the octohedron with a rhombic base, measuring 103.20 to 131.16. This he had not seen ; nor did they analyze it.

Prof. H. D. Rogers submitted some verbal remarks on the occurrence of crystals of fluate of lime in Cannel coal.

Prof. Rogers stated that his attention had been recently drawn to the frequent violent snapping of the English Cannel coal, which he had been using in his grate, and to the almost explosive dispersion of small fragments of fluor spar, about the apartment, which accompanied the louder crepitations. He had satisfied himself, by watching the phenomenon, that the fluor spar was derived from the body of the coal, since it was thus projected from the grate when nothing had been placed upon the fire but large and clear lumps of the coal, and afterwards he had detected a small isolated crystal of the mineral upon breaking a piece of the coal. Some of the fragments of the fluor scattered into the room were more than half an inch in diameter, and retained portions of the original crystalline faces, indicating that it is probably lodged, within the coal, in insulated crystals. He mentioned this as the first instance, within his knowledge, of the discovery of any of the compounds of fluorine in a substance appertaining to the vegetable kingdom ; and he intimated that, since this element exists, as is now admitted, in the bodies of

animals, we are almost authorized to infer that they derive it from their ultimately vegetable food. He suggested that this fluor of the Cannel coal may, nevertheless, have been derived by volcanic agency, from subterranean sources, possibly by hydrofluoric acid, in the form of vapor, transmitted through the fissures of the coal, reacting upon the calcareous matter which occurs among the earthy substances of many coal seams. The fluoride of calcium, thus generated, may have been formed either within the substance of the coal, or, more probably, in the passage of the hydrofluoric acid vapor through underlying beds of limestone, and have been afterwards sublimed into the crevices of the coal bed.

Dr. Charles T. Jackson read a paper on the Importance of the Science and Art of Mining, which, he stated, held a rank second in importance to that of agriculture only. He said that it was his wish to call the attention of the public to the real metallurgic resources of the country, but, at the same time, to condemn absurd or unprincipled speculation, which had very much interfered with and retarded a healthy and profitable development of American mining operations.

Dr. Jackson described some of the most important mines in the country, and gave a particular account of the newly-discovered copper and silver mines of Lake Superior, especially of those belonging to the Lake Superior, Pittsburg and Isle Royal, and Boston companies, which he had been employed to survey. Through his researches, the importance of the silver veins had first become known to the public ; and he doubted not that they would, ultimately, become profitable to the companies owning them, and valuable sources of revenue to the government and to the people.

The Lake Superior mining district is very remarkable, especially the deposits of the native metals in the trap rocks, and in the adjacent calcareous spar veins, which traverse the conglomerate rocks. The trap rocks form very long and broad dykes in the conglomerate and red sandstone, and pursue a north-east and south-west course, nearly parallel to the coast of Kewenaw Point, and are supposed to extend to the St. Croix, a tributary of

the Mississippi River. This range of trap dykes is nearly parallel with the great trappean ranges, forming the north mountains of Nova Scotia, and skirting the coast of the Bay of Fundy with their mural escarpments, and, like them, include, in the amygdaloidal portions especially, masses and disseminated globules of native copper which fill the cavities. In Nova Scotia, however, the metallic copper is, more frequently, found in the trap tuff or breccia, and regular veins of the metal are not found ; while, on Kewenaw Point, on the south shore of Lake Superior, the copper veins are more regular, and follow, very frequently, the Prehnite veins, which run N. 32° W. and S. 32° E., the crevice filled with Prehnite being, probably, the line of fracture through which the metallic copper was sublimed or injected. That this was sometimes the case, is obvious from the fact that the metallic copper takes the imprint of the crystals of Prehnite which line the sides of one of the leading veins on Eagle River. The disseminated copper in the amygdaloid appears to be coëval in origin with the trap rocks. He had formerly supposed it might have been reduced from copper ores preëxistent in the sandstone, the amygdaloid being regarded by him as a product of the interfusion of the sandstone and trap. This idea he does not think can be sustained by the facts noticed in the Lake Superior rocks ; for the copper should be found only along the line of junction of the trap and sandstone, if such was its origin, and the copper ores ought to be found more frequently in the adjacent sandstone. The north-western course of the veins, being nearly at right angles with the direction or strike of the dykes, militates against that theory.

Among the interesting discoveries, which he made while exploring the Lake Superior mines, in 1844, was the occurrence of perfectly pure native silver, attached, by a firm metallic union, to native copper, without any blending or alloying beyond the line of contact, and patches and veins of native silver in masses of pure copper. The silver, being pure and quite soft, had been previously mistaken for metallic tin, an idea obviously arising from the known associations of tin and copper ores in Cornwall. While at Lake Superior, he proved to those who had any doubts that the metal referred to was pure silver, by subjecting it to chemical experiments.

The proportion of silver mixed with the copper, at the Lake Superior, and Pittsburgh and Isle Royal Company's mines, on Eagle River, is of much greater value than the copper in the same rock, and will be advantageously separated.

He would refer to his Reports to those companies for details concerning the value of their ores. A new vein has recently been discovered by the Pittsburgh and Isle Royal Company, at their mines, on the south-west branch of Eagle River, which has furnished specimens of native silver of extraordinary richness, some of which have been analyzed by Mr. A. A. Hayes. The Lake Superior Company's mines are wide, and sufficiently rich for profitable mining. [See his Reports to that company.]

The Copper Falls Company have a remarkable vein of metallic copper, which is from six to eighteen inches wide, and is charged so fully with copper as to resist the drill. Its extent is not yet known, but it was traced, for the distance of eighty feet, in a course parallel with that already noticed as the general direction of the veins in the trap rocks. He had recently learned that very large sheets of metallic copper had been discovered in working this vein, and that the amygdaloidal wall rock was quite rich in copper. A little metallic silver has also been found associated with the copper in the vein. The Boston Copper Company has opened a very remarkable vein of copper at Agate Harbor. It is a regular vein of crystalline calcareous spar, traversing the conglomerate in a north and south direction, and is five inches wide on the top of the cliff, on the lake shore, and one foot wide near its base, twenty feet lower down. In this vein, he found crystals of metallic copper quite abundantly, and some very large lumps and crystalline masses. He obtained one mass weighing forty pounds, which was covered with crystals of pure copper and particles of silver. Another mass had been sent him by the miners, which weighed more than one hundred pounds, and another had been sent to the trustees of the company which weighs five hundred and sixty-four pounds. The prevalent forms of the crystals are the regular octahedron and the rhombic dodecahedron with the edges replaced by single planes; but other and more complicated forms also occur.

It is obvious, both from the crystalline forms and the mode of occurrence of this copper, that it was deposited from a state of

igneous fluidity; and, from the circumstance that the walls of the vein are encrusted with Laumonite, it would appear that the spar vein itself is of igneous origin. Many other instances of a similar kind indicate that the calcareous spar veins, which traverse the conglomerate and sandstone rocks, are true veins of igneous origin.

At Copper Harbor, the green rock, formerly mistaken for carbonate of copper, but which Dr. J. ascertained to be a hydrous silicate of the oxide of copper, or chrysocolla, has been explored, and it has led to the discovery of a very remarkable vein of the black oxide, and black and brown silicates of copper, from which a considerable quantity of ore has been taken, and has been wrought into sulphate of copper, at the Roxbury Laboratory.

This vein is, however, quite uncertain; for the ore widens into flattened ellipsoidal masses, and then thins out and disappears, while the dead rock or calcareous spar takes its place. It is said that black sulphuret of copper has been found, at some depth, in this vein; but he had seen no specimens of it. The miners had penetrated, to the depth of forty or fifty feet, in dead vein, but had extracted much rich ore within twenty feet of the surface, where a drift had been excavated for its removal. This vein is from eight inches to one foot wide where the black oxide is obtained, but is quite irregular.

Dr. J. would suggest that the chrysocolla was, originally, a gelatinous mass, like silica, separated from minerals by acids, and that, when the rock cooled this jelly, the hydrous silicate was deposited, while, in its more heated interior, the brown and black silicates were deposited. He would suggest, also, that the black oxide might have been precipitated, from the hot siliceous solution, by the action of hot limewater, which might have been abundantly produced in the vein during its formation. It is easy to imitate this operation in the laboratory of the chemist; and there is no reason why it may not have been one of nature's great chemical operations.

Trap rocks occur very near this vein, and, perhaps, underlie the conglomerate for some distance around. To them is attributed the heat which permeated this vein; and the alkalies, which produced analcime instead of laumonite, in the lower portions of the lode, may have originated from the subjacent igneous rock.

Laumonite, also, occurs in this and in an adjacent calcareous spar vein, and is, doubtless, derived from the chemical combination of the lime of the spar with the siliceous and aluminous ingredients of the conglomerate and sandstone. Datholite is found in many of the spar veins, in the trap rocks, at Eagle Harbor, Copper Falls and Eagle River, and the crystals of that mineral often include bright scales of metallic copper. The crystals of calcareous spar, and those of Prehnite, also, include bright particles and scales of that metal. This fact must modify our notions as to a slow aqueous infiltration of those minerals into veins and geodes; for, were it a slow operation, the copper would have become oxidated, which is never the case in any of the instances he had examined.

Dr. J. took this occasion to state that he had never owned, or been interested in any stock, in any of the Lake Superior or other mines; and that he had no other object in view, in these statements, than to advance the interests of science, and to aid in the promotion of the legitimate mining operations of this country. He deemed it necessary to make this avowal, because, on some occasions, more unworthy motives had been attributed to him.

A valuable and extensive donation of skins of mammalia and birds, the skeleton of the lesser ant-eater, and various reptiles, from Dr. Francis W. Cragin, of Surinam, was announced.

James Lloyd was elected a member of the Society.

DONATIONS TO THE CABINET.

Five skeletons of birds, and one of a species of Rana, and twenty-one crania of reptiles, birds and small quadrupeds. From *E. W. Coale, M. D.*

ADDITIONS TO THE LIBRARY.

Dana, James D. The Structure and Classification of Zoöphytes; being the Introduction to the Volume on Zoöphytes, one of the Series of the Voyage of the American Exploring Expedi-

tion, in the Years 1839 to 1842. 4to. pp. 132. Philadelphia, 1846. From the *Author*.

American Journal of Science and Arts. For March, 1846. From the *Editors*.

March 18, 1846.

The President in the Chair.

Prof. Asa Gray communicated a notice of a new genus of plants of the order of *Santalaceæ*, of which the following are the technical characters.

Darbya. Flores dioici. *Masc.* Perigonium simplex, turbinatum, ad medium 4–5-dum; lobis ovatis, patentibus. Discus crassiusculus, perigonii penitus tubo adnatus, margine 4–5-crenatus. Stamina 4–5, e sinubus disci, lobis perigonii opposita: filamenta brevia, subulata: antheræ biloculares; loculis fasciculo filarum araneosarum ad basin lobi perigonii annexis. *Fœm.* Ignota. Fructus * * * stylo unico superatus, unilocularis, monospermus. Frutex, in Georgia et Carolina superiore vigens, glaber, cortice griseo. Folia opposita, uncialia, membranacea, ovalia, margine integerrima, subundulata, breviter petiolata, venosa, subtus pallidiora. Pedunculi axillares, solitarii, folio breviores, ebracteolati, umbellam 3–8-florem gerentes; floribus parvis virescentibus, intus flavidis.

Species. *Darbya umbellulata.* Hab. near Milledgeville, Geo., *Dr. Boykin*, and at Macon, *Prof. Darby;* also at Lincolnton, N. C., *Mr. M. A. Curtis.*

Dr. Gray stated that, as he had no doubt that this shrub adds another to our few genera of this interesting order, he desired that it should bear the name, and commemorate the botanical services, of Prof. Darby, one of its discoverers, to whom a large part of our still incomplete knowledge of the plant is owing. Dr. G. hoped that some botanist of upper Carolina or Georgia would preserve the pistillate flowers and young fruit in spirits, in order

that the structure of the ovula, and the fecundation so peculiar in this natural family, may be duly studied.

A printed description of the fossil fish, mentioned in a communication received from Dr. Joseph G. Norwood, on the 18th February last, (see Proceedings of that date,) drawn up by himself and Prof. David D. Owen, was communicated to the Society by the former.

After giving its characters in detail, the authors remark upon its geological position. It was split out of a layer of light gray subcrystalline limestone, containing numerous *Atrypa prisca* and *Spirifer euruteines*, associated with *Strophomena euglypha, Pterinea cardiiformis, Favosites spongites, Calymene bufo, Tentaculites scalaris*, and other fossils characteristic of the shell-beds which form a part of the chain of rocks, in the bed of the Ohio River, at the Falls, immediately under the water-limestone found in digging the Louisville canal. On Lewis's Creek, however, the water-lime is absent, or is represented only by a thin layer of chert, and the black slate is found in the bank of the creek, not four feet above the layer containing the fossil fish. This black slate is most likely the equivalent of the Genesee slate, and not of the Marcellus shale of the New York survey, since the underlying layers, though they contain Onondaga and Corniferous fossils, yield also many organic remains of the Hamilton group.

The writers consider it to be evidently a ganoid fish, analogous to those described from the Devonian system of Europe. On the supposition that it belongs to a new genus, as would seem to be indicated by the great size of the scutcheon plates and their peculiar form, they propose for it the name of *Macropetalichthys rapheidolabis*. They believe this to be not only the first instance of finding scutcheoned fishes in this country, but that it establishes the lowest geological position in which the remains of vertebrate animals have been found, excepting defensive fin-bones in the Corniferous group in New York, and the scales of fishes, traced throughout the Clinton group of Pennsylvania and Virginia, by the Professors Rogers.

Dr. N. B. Shurtleff remarked upon some peculiarities of the skeleton of the Asiatic elephant (*Elephas indicus*) belonging to the Society.

The bones are those of the largest elephant ever brought to the United States, the animal having been about nine feet in height during life. It was frozen to death on its passage, and died when within a few miles of this city, at Nantasket roads. At the time of the dissection, measurements were accurately taken by Dr. S., and the flesh was removed from the feet and tail, under his direction, so carefully that no bone was lost or displaced in either. The bones of the sternum and cartilages were prepared and preserved in a manner to retain their natural relations to the bones of the thorax. The thickness of the intervertebral substance was noted, and the form of the spinal column draughted, so that the bones, when put together, should exhibit, in the dry skeleton, the same form they had when covered with flesh.

Dr. S. stated that the reason of his mentioning this careful mode of procedure was not for the purpose of showing that this is his usual way of securing a knowledge of the proper form of skeletons; but because, having found that the Society's specimen does not agree in all respects with the description by Cuvier, he wished to have it seen that the differences were not caused by the loss or misplacement of the bones.

Cuvier, in his *Ossemens Fossiles*, states that "the spine of the elephant is composed of seven cervical, twenty dorsal, three lumbar, four sacral, and twenty-four or twenty-five coccygeal vertebræ, and that this animal has five true ribs only, and fifteen false." This, certainly, is not always the case, for our specimen has *five* sacral, like the *Mastodon giganteum*, and *twenty-six* coccygeal vertebræ, including the terminal bone. Our skeleton has likewise *six* true ribs. A point worthy of especial notice, as observed in our skeleton, is the fact that there are only nineteen pairs of ribs, while there are twenty dorsal vertebræ, the last dorsal vertebra possessing all the characteristics of a vertebra of that class, but showing no appearance that it ever had ribs articulated with it, which appearance is very distinct in all the other dorsal vertebræ. The number of sacral vertebræ agreeing with that of the North American Mastodon, brings that extinct animal nearer to the existing races of Pachydermata.

The remarks made upon our skeleton of the elephant are equally true in regard to another specimen of the Asiatic elephant, a young animal whose bones are in the collection of

Dr. J. C. Warren, that, also, having only *nineteen* ribs, *six* of which are true, and *twenty* dorsal vertebræ. (Another individual, since examined, has the twenty pairs of ribs, and five sacral bones.)

These facts prove, at least, that the number of ribs in a perfect skeleton do not always indicate the number of dorsal vertebræ, and the reverse.

The number of cubic inches contained in the cranial cavity of the Society's skeleton is three hundred and fifty-four.

Dr. Shurtleff also exhibited an instrument, constructed by himself, for measuring the capacity of the crania of animals, and presented it to the Society, as a standard measure for future use.

It consists of a hollow metallic cylinder, three inches in diameter, and about fourteen inches in length, of the capacity of exactly one hundred cubic inches. Into this hollow cylinder slides a wooden cylinder nicely adapted with a graduation to hundredths, or cubic inches, marked upon one side. In using the above, the cavity of the skull is first accurately filled with a proper material, such as flax-seed, beans, or shot, and then the material is measured, each cylinder full being one hundred cubic inches. The quantity remaining above the hundreds is ascertained by putting it into the measure and introducing the wooden cylinder, the graduation on the side indicating the number of cubic inches less than one hundred.

Dr. Samuel Cabot, Jr., made some observations concerning the supposed identity of *Anas penelope* and *Anas americana*, the European and American widgeons.

Having had a recent opportunity of dissecting two American widgeons, Dr. C. had observed some peculiarities of structure which seemed to him to forbid the opinion that these birds are identical with the European species. Although, very generally, resembling each other, there are some remarkable differences. The difference in the length of the intestines is greater than ever occurs in birds of the same species. Dr. C. had compared the American species with a specimen of the European bird, also dissected by him ; and he gave the comparative measurement of the different parts.

Anas Americana, American Widgeon.	Inches.	*Anas penelope*, European Widgeon.	Inches.	
Measures in length,	20 1/2		20 3/8	
" " extent,	34 1/2		33	
Tip of bill to nostril,	1 2/8		1 1/8	
Opening of nostril in length,	1/8		3/16	
Œsophagus to proventriculus,	8		7 2/8	
Proventriculus,	1 1/2		1 6/8	1/8 thick covered on inside with openings of follicles.
Gizzard, length,	2 1/2		2 3/8	
" width across tendons,	1 1/2		1 5/8	
" perpendicular to tendons,	1 3/8			
Muscular walls of two sides through,	1 1/16		1 3/8	of right side,
			1	of left side.
Contained eel grass, gravel, &c., a considerable quantity.				A small quantity of sand, gravel and eggs of fish or insects.
Intestines, from gizzard to anus,	63		52	
Liver, right lobe, long,	3 3/8			Much injured, does not appear large, gall bladder full, 1 1/8 in. long, 4/8 wide.
" " " across,	1 1/8			
" left " long,	2			
" " " across,	1			
Heart, length,	1 1/2		1 1/2	
" width,	1		1 1/8	
Trachea, to bifurcation of bronchi,	7			
Bronchi,	6/8			
Bony box, at lower larynx, length,	5/8		1	nearly round, and
Diameter, (much largest on right side,)	3/8		6/8	equal nearly on both sides.
Testicles, length,	5/16		6/16	
" width,	3/16		2/16	
Kidneys, length,	2 1/2			Not measured.
Left cœcum, length,	8			" "
Right " "	7 1/8			" "
Cœca enter intestine at from vent.	4			" "

On the inside of the gizzard, in the *Anas americana*, opposite to the centre of each muscle, is a smooth, hard, and almost bony plate, one of which has its thickest edge uppermost, and the other the reverse, so that they present their surfaces diagonally, as regards the plane of motion, though applying their opposite surfaces very exactly to each other. These plates are of an oblong shape, $\frac{7}{8}$ of an inch in length, and $\frac{5}{8}$ across.

Dr. Cabot also stated that he had dissected a male of *Tetrao cupido;* and gave the measurement of some of the internal organs, viz.:[1]

Tongue. Length, to tip of os hyoides, $2\frac{1}{2}$; to opening of larynx, $\frac{7}{8}$; to base, $\frac{5}{8}$.

Œsophagus. Length, to crop, 5; diameter of upper part, which is very dilatable, $1\frac{1}{2}$; length to proventriculus, $8\frac{1}{2}$.

Proventriculus. Length, $1\frac{1}{8}$; thickness, $\frac{3}{16}$.

Gizzard. Longest diameter, $2\frac{3}{8}$; shortest diameter, 1; at right angles with the longest diameter, $1\frac{5}{8}$; lining membrane of gizzard very tough and horny, and marked by longitudinal rugæ, its muscular parietes about $\frac{1}{2}$ inch thick; filled with half-digested corn, rye and other seeds, mixed with fragments of stone and sand.

Intestinal canal. From gizzard to anus, length, 70.

Cœca. Length, 23; opening into intestine, 5 from anus; diameter of upper part, flattened out, $\frac{5}{8}$; its diameter larger than that of the intestine in its whole length, except in the cloaca and the upper part of œsophagus.

Crop. Diameter, when flattened out, 3.

Liver. Length of right lobe, $2\frac{7}{8}$; in diameter, $1\frac{1}{2}$; length of left lobe, 2; in diameter, $1\frac{1}{8}$.

Kidneys. Length, nearly 2.

Testicles. In length, $\frac{3}{16}$.

Heart. In length, $1\frac{7}{8}$; diameter, $1\frac{2}{8}$.

Trachea. To bifurcation, not stretched, 6; do., stretched, $6\frac{7}{8}$.

Bronchi. In length, $\frac{3}{8}$.

Dr. C. T. Jackson read the results of a chemical analysis

[1] The measurements are in inches and parts of an inch.

of lava from the great crater of Kilauea, in Hawaii, one of the Sandwich Islands.

He remarked that this lava is distinguished for its ready fusibility, and is a true glass, with ferruginous, calcareous and alkaline bases. It is well known, from the descriptions of travellers who have visited this volcano, that the crust of indurated scoriæ becomes suddenly melted by the imprisoned heat of the volcano, and that, when thus liquified, it is tossed about by the escaping gases, so as to represent an immense caldron of boiling igneous fluid. Each explosion of gas or steam throws off masses of semi-indurated lava, which draw after them delicate filaments resembling finely-drawn green glass, and these glassy fibres are driven by the wind into heaps, at the sides of the crater, where considerable quantities may be collected. The natives of Hawaii call it the hair of Pele, the demigod of the mountain, who is supposed by them to tear her hair with rage when the volcano is in eruption, and they formerly endeavored to appease her wrath by throwing a hog into the crater. This curious superstition is now becoming obsolete through the influence of the missionaries.

This analysis was made, under Dr. J.'s directions, by his friend and pupil, Mr. Joseph Peabody, of Salem. The alkalies were separated from the filamentous lava, or Pele's Hair, by himself. A slight overrun in the analysis may be imputed to the greater purity of the volcanic glass in its filamentous state.

Several lots, of 25 grs. each, were analyzed with the following results per cent.:

Silicic acid,	50.00, contain'g oxygen	25.975	
Protox. of iron,	28.72	6.538	Oxyg. of bases,
Lime,	7.40	2.078	
Alumina,	6.16	2.923	13.067
Potash,	6.00	1.017	
Soda,	2.00	0.511	
	100.28		

It will appear, from this analysis, that the ratio of the oxygen of the acid is to that of the bases as 2 to 1. Hence the lava is a bisilicate of those bases, or (Fe Ca Al K N) Si^2, or Fe Si + (Al Ca K N) Si.

It is probable that this lava will make good bottle-glass.

Dr. C. T. Jackson exhibited a series of fossil shells and corals from the lead mines of Gratiot's Grove, Wisconsin, which were collected by Mr. Joshua Childs, formerly captain of mines in that district.

The fossils were all internal moulds, not a trace of any of the substance of the shells remaining. They all belong to the Silurian limestone group. A perfect dodecahedral crystal of Galena was also exhibited, which came from the Wisconsin lead region.

Joseph G. Norwood, M. D., of Madison, and John T. Plummer, of Richmond, Wayne county, Indiana, were elected Corresponding Members.

J. M. Whiton and Henry Warren, Esq's., were elected members of the Society.

DONATIONS TO THE CABINET.

A box of specimens, illustrating the rock formations and fossils of the southern part of Lee county, near the junction of the Kinchafoona and Flint Rivers, Georgia. From *L. B. Mercer, M. D., Palmyra, Georgia.*

A graduated cylinder for measuring the capacity of crania. Presented by *Dr. Nathaniel B. Shurtleff.*

ADDITIONS TO THE LIBRARY.

Reports of the First, Second and Third Meetings of the Association of American Geologists and Naturalists at Philadelphia, in 1840 and 1841, and, at Boston, in 1842; embracing its Proceedings and Transactions. 8vo. pp. 544, pl. 16. Boston, 1843. From *A. Binney.*

Musci Alleghanienses, sive Enumeratio Muscorum atque Hepaticorum quos in itinere à Marylandia usque ad Georgiam, per tractus montium, A. D. 1844, decerpserunt Asa Gray et W. S. Sullivant. Concinnavit et exposuit W. S. Sullivant. 8vo. pp. 87. Columbus, Ohio, 1846. From the *Author.*

Report on Scientific Nomenclature, made to the Association of American Geologists and Naturalists at New Haven, May, 1845. 8vo. pp. 7. New Haven, 1846. From the *Association.*

April 1, 1846.

J. E. Teschemacher, Esq., in the Chair.

Mr. J. E. Teschemacher exhibited specimens of vegetable remains from the anthracite coal-beds of Mansfield, Mass.

He remarked that the subject of fossil vegetables was exciting increased attention among naturalists, and that the study of them was very much facilitated by the new system of classification introduced by Presl, founded upon the venation of the leaves, in place of that based upon the fructification. The leaves were often well preserved, while the fructification was rarely shown so perfectly as to be of service. Mr. T. announced his intention of devoting some time to the study of the American coal-plants. He had already been able to detect several mistakes, into which Brongniart and others had been led, to which he would refer at some future time.

Prof. H. D. Rogers expressed the opinion that different species of vegetation would be found to characterize different beds of coal, according to the age of the deposit.

Dr. A. A. Gould read a letter from J. Hamilton Couper, Esq., dated at Bainbridge on the Chatahoochie River, Georgia, March 15, 1845.

Mr. Couper had found the silicified limestone of that neighborhood, commonly called the *burr mill-stone* by reason of the use to which it was sometimes applied, to be very abundant. It is filled with fossil shells, none of which appear to be identical with the Claiborn fossils as described by Conrad and Lea. Few of them are identical with the cretaceous shells represented by Dr. Morton, though Mr. C. considered them to belong obviously to that formation. The most striking and abundant shell is an *Ostrea,* six inches by four or five, somewhat resembling *O. panda. Pectens* of several species are very abundant; as is also a species of *Nummulites*, probably *N. Mantelli.* Mr. C. also found several *Turritellæ*, *Spatangi*, *Echini* and their spines, a small *Ammonite,* a *Scutella*, a *Sigaretus,* and a *Conus* two and

a half inches long, somewhat resembling *C. gyratus*, but with a flat spire. Mr. Lyell had placed this formation in the Eocene series; but Mr. C., judging from the fossils, could not agree with him. Above, and upon this formation, imbedded in clay-marl, he had found fragments of fossil bones. From the rounded form, compactness of texture, and the eccentric and concentric circles of the cross sections of the ribs, he considered them to belong to the *Zeuglodon*.

Prof. H. D. Rogers asked the attention of the Society to some phenomena noticed by him in the mineralogy and geology of the southern shore of Lake Superior. He also exhibited specimens of sandstones and trap rocks, and their concretionary geodes, from the same region.

The first feature alluded to by Prof. Rogers was the mode in which the metallic copper of Kewenaw Peninsula is often surrounded by certain minerals, its frequent associates. At the Eagle River mine, and elsewhere, the metalliferous rock is not, as sometimes supposed, a real trap rock, but a mixture of trappean matter, and that of the red sandstone formation, more or less baked and modified by intense igneous action. These semi-fused materials, in crystallizing, have very frequently resulted in the following curious arrangement: the crystalline metallic copper occupies the centre of globular and variously formed concretions; calcareous spar usually, but not always, invests the copper; and very generally the exterior of the kernel is pure crystalline chlorite. Specimens were shown proving this to be the common order. These nodular lumps are dispersed through a base which exhibits a sort of pasty mixture of softened red shale and true trappean matter; and many of them are so surrounded as to indicate them to be true segregations from this semi-igneous, semi-aqueous compound. Upon this view, we may derive the magnesia of the *chlorite*, which could not originate from the red shale, either from the hornblende of the trappean matter, or from a sublimation of magnesium, in the form of vapor, penetrating to the outer crust at a moment of volcanic outburst, as potassium and sodium are conjectured to do, according to Forchhammer, in the generation of some granitic rocks.

Evidence was then presented of the production of a portion, at

least, of the agates, which so abound in the altered rocks, adjoining the dykes of trap, from amygdals of chlorite; and various specimens were exhibited, showing the stages of transition from the one to the other.

Prof. R. next referred to the interesting question of the age of the red sandstone and conglomerate of Lake Superior, about which geologists have been much divided in opinion. The absence of any clear sections showing the place of this formation, in relation to the other strata of Michigan, and the non-existence of fossils in it, had hitherto made its date merely conjectural. He had to announce, however, that he succeeded, in September last, in detecting the contact of this conglomeritic mass with rocks of a determinate place in the Appalachian series. The peninsula of Kewenaw offers no such contact; but, going to the neighborhood of Chocolate and Carp Rivers, he there discovered the following condition of things: First, a group of rocks, the equivalents, undoubtedly, of the Primal sandstone and Primal slate, of Professors W. B. Rogers and H. D. Rogers, denominated, in the nomenclature of the New York Survey, the Potsdam sandstone, and these rocks, highly inclined, and traversed by parallel east-and-west axes. Secondly, upon the uptilted edges of this earliest palæozoic formation, rests, in an unconformable position, and with a very gentle northern dip, the conglomerates and shales of the red sandstone series. Specimens of the conglomerate were displayed, in which the pebbles were all from the older rocks. Mr. Rogers thought this fact of unconformable superposition an almost conclusive proof of a post-palæozoic date; and he proceeded to argue, from various points of analogy between the red sandstone itself, its trappean dykes, and their mineral associations, with the similar components of the mesozoic or new red sandstone of the Atlantic States, that the formation in question is of equivalent age and origin with this last-named interesting group of rocks.

Some discussion of these subjects was then had by Dr. C. T. Jackson, Prof. William W. Mather, of Ohio, and Prof. Rogers. Prof. Mather then stated some facts observed by him, in relation to the geology of the northern shore of Lake Superior.

Dr. John Bacon, Jr., informed the Society that he had recently made a microscopic examination of sand from the desert of Zahara, taken from specimens in the Society's cabinet.

He had found it to consist, in a great part, of siliceous grains, with a few *Polythalamia* intermixed. These are mostly fragments. He had been able to identify only one species, viz., *Textularia globulosa.* He intended to give the subject further attention.

Dr. A. Binney exhibited a collection of fossils, and other geological specimens, from the strata of the bluffs at Natchez, on the Mississippi River.

Dr. B. remarked that the flat alluvial borders of the lower Mississippi are interrupted, in several places, by elevated cliffs, generally on one side of the river only, at the foot of which the channel flows, undermining and breaking them down from time to time, and thus exposing a natural section of their strata. These elevations are known as *bluffs.* The bluff on the eastern side of the Mississippi, at Natchez, is about two hundred and fifty feet above the low-water level of the river. It is made up of nearly parallel strata of calcareous loams, clays, sands and gravel, which contain in the different layers, besides inorganic substances, great numbers of terrestrial, and some fluviatile, shells, remains of mammalia, and numerous water-worn, agatized pebbles, imbedding corals, madrepores, encrinites, and marine shells. Agatized wood and lignites are also found. No detailed description of the bluff formation has yet been published; but in the limited notices which have been given it appears to have been taken for granted to be wholly the result of diluvial action, and to form a part of the extensive and as yet not fully understood deposits, known as *diluvium* or *drift.*

An incomplete series of specimens from the different strata, collected at Natchez, by Mr. John Bartlett, had afforded Dr. B. an opportunity of examining the fossil land shells, and of comparing them with existing species; and the result of this examination he proceeded to lay before the Society. He ventured at the same time, but with much hesitation, owing to his want of famili-

arity with geological subjects, to offer some suggestions respecting the upper series of the bluff formation itself.

The most remarkable portion of this formation is the upper bed, or that next below the soil of the surface. It consists of a yellowish calcareous loam, thickly filled in many places with terrestrial shells, and in others, with a few fluviatile species. The depth or thickness of this bed is described to be from twenty to fifty feet. The material of which it is composed is minutely comminuted, and, when dried, falls into an impalpable powder. The shells are generally unbroken, the most delicate edges of the aperture remaining entire, and, except in the loss of color, and the want of cohesion caused by the destruction of their animal matter, they are precisely similar to existing species. The calcareous concretions and bones, found in this bed, are also mostly unbroken, and exhibit no marks of friction, or wear, in a current of water. The condition of the bed, and of its contents, seems, therefore, to forbid the opinion that they ever formed a part of a great diluvial current, but point rather to a slow subsidence of the materials in still water. Under any other circumstances, the minute particles would have been mixed with other matter, and the shells, some of them of a thin and delicate texture, would have been mostly fractured and crushed.

Below the loam, is a bed of light ash-colored marl, containing fluviatile shells, and having a thickness of from five to ten feet; this, with only an intervening stratum of fine gravel, is succeeded by a bed of sandy loam, from twenty to thirty feet in thickness, containing bones of the mastodon. The other deposits are mostly clays and sands, with calcareous and arenaceous concretions, and limonites, of too soft a consistence, and too loose a structure, ever to have withstood the grinding and wearing effects of a rapid motion in a stream of sand and water. At the depth of one hundred feet, or thereabouts, (for it has not been accurately measured,) there occurs a stratum of two and a half to three feet in thickness, of rolled and water-worn fragments of agate, calcedony, cornelian and hornstone, with agatized corals, madrepores and encrinites, having precisely the appearance they might be supposed to have if brought down, by the current, from the upper districts of the river. Below these, clays and sands, with concretionary minerals, fossilized wood, and lignites, imbedded

in some of them, are noticed to low-water mark. The last bed, in the series visible above water, is an indurated clay, of unknown thickness, which is said to contain bones of the *Zeuglodon*, and apparently belongs to the tertiary formations.

Dr. Binney said that, in the course of the examination, he had been struck with the near resemblance of the upper beds of the *bluff* to the deposit in the valley of the Rhine, called locally *loess*, as described by Mr. Lyell. Like that, they consist of a yellowish pulverulent loam filled with land-shells, and calcareous concretions; and he supposed them to be due to similar causes. The physical characters of the deposit, and its contents, go far to account for its origin. The Mississippi, draining, through ten thousand channels, a vast geographical area, bears upon its surface the light objects washed down the streams of a large part of the central portion of North America, and holds suspended, in its waters, comminuted particles, derived from the various soils and calcareous strata through which its tributaries pass. During the rainy seasons, its accumulated waters rise above its banks, and, spreading over the low country, form shallow lakes, where they remain until the river again subsides within its banks. The deposit, left by the retiring waters, is a calcareous loam, and often resembles precisely the loamy deposits of the bluff. Like these, too, it contains land and fluviatile shells left on the surface of the deposit, and sometimes the carcasses of animals which have been turned aside from the main current of the river. We have only to suppose then the region, in which the bluff deposit prevails, to have been formerly but a little raised above the ordinary level of the Mississippi, and, consequently, to have been subject to frequent inundation by the rising of its waters, or that, from the damming up of its waters below, the river spread out into an extensive lake, to have at once a cause adequate to such a deposit as that presented by the strata in question. The present position of these beds is easily accounted for by their gradual uplifting through earthquake action, a theory by no means a violent one, as the valley of the Mississippi is one of the theatres of modern earthquakes, and has been disturbed by them at a period yet very recent.

Dr. B. stated it to be his opinion, derived from facts that had come to his knowledge, and from a few published remarks that

had met his eye, from time to time, that the *loess*, so to call it, is an extensive formation in the region bordering on the Mississippi, and that it will be found largely developed there and in the valleys of its tributary rivers. He had, in several instances, had brought to him fossil land-shells, in the same condition as those found in the Natchez bluff, with no other indication of their origin than that they were obtained in Mississippi. This fact seemed to him to indicate the existence of other localities in that vicinity. Prof. David D. Owen, of New Harmony, Indiana, has discovered an extensive deposit of this kind in Pusey County, on the Wabash River, in that State. It is a fine sandy loam, of a yellowish-white color. It occurs on the upland, from twenty-five to fifty feet above the bottom land, and is generally reached in digging wells at the distance of from six to ten feet from the surface, and has been penetrated to the depth of twenty-five feet, without passing through it. It appears also on the opposite side of the Wabash, in Illinois, at about the same level, and near Shawneetown, on the Ohio River, forty miles distant. Prof. Owen, from whom this information was obtained, had heard that a similar deposit had been noticed in an analogous situation on the Mississippi River, above the American bottom, opposite St. Louis. The Wabash deposit contains great numbers of terrestrial, and some fluviatile, shells, in a condition similar to those of the Natchez bluffs.[1]

On the whole, Dr. Binney had adopted the conclusion that the upper beds of the Natchez bluffs are analogous to the *loess* of the Rhine, and that the strata are the result of fluviatile action, and not attributable to the drift. A long period of gradual sinking of the land, producing stratum upon stratum of sands, clays, gravel, marl and loam, brought down by the waters, succeeded by another lengthened period of gradual rising, during which the river cut its way through the strata it had before deposited, would account for all the existing appearances. In this view, the concretionary minerals, contained in the beds, must be held to be the result of chemical action among their materials, after they were deposited.

[1] Hon. B. Tappan stated to Dr. B., verbally, that a similar deposit, with land-shells, occurs in the valley of the Scioto, near Columbus, Ohio.

The species of land-shells detected in the *loess*, in the specimens sent, are: *Helix albolabris*, *alternata*, *concava*, *elevata*, *exoleta*, *gularis*, *hirsuta*, *inornata*, *inflecta*, *ligera*, *monodon*, *palliata*, *perspectiva*, *profunda*, *thyroidus*; *Helicina orbiculata*; *Succinea obliqua*. These are all existing species. Several of them do not now inhabit the neighborhood of Natchez, though they are very numerous on the banks of the more northern tributaries of the Mississippi.

In a small parcel of *loess* from the Wabash deposit, Dr. B. found *Helix clausa*, *hirsuta*, *inflecta*, *labyrinthica*, *lineata*, *thyroidus*; *Pupa armifera* and *contracta*; *Helicina occulta*; together with several species of *Limnea*, *Planorbis*, *Amnicola* and *Valvata*; — all at present existing in that region, except *Helicina occulta*, a rare shell when recent, but very plentiful in its fossil state, though it has been found alive in south-western Pennsylvania.

A careful examination of both deposits would no doubt bring to view other species.

Joseph Peabody, of Salem, and Frederick W. Davis and Thomas Bailey, of Boston, were elected Members of the Society.

DONATIONS TO THE CABINET.

A collection (50 skins) of Australian birds. From *Russell Sturgis*, *Esq.*

Three cases of insects. From *M. S. Perry*, *M. D.*

A slab of flexible sandstone, 18 inches long, 3 inches wide, and 1 inch thick, from a deposit at Spartacus, S. C. From *Robert W. Gibbs*, *M. D.*, of Columbia, S. C.

ADDITIONS TO THE LIBRARY.

Annals and Magazine of Natural History. For March, 1846. From the *Courtis Fund.*

Gray, G. R. Genera of Birds. 4to. No. 23. From the *Audubon Fund.*

Transactions of the American Philosophical Society. Vol. IX. part 2. From the *Society.*

Proceedings of the American Philosophical Society. September to December, 1845. From the *same.*

Johannes Rœper. De Organis Plantarum. 4to. Basiliæ, 1828. From *Prof. Asa Gray.*

Dana, James D. On the Drawing of Crystals. 8vo pamph. New Haven. From the *same.*

Oakes, William. Catalogue of Vermont Plants. 8vo pamph. Ipswich, Mass. From the *same.*

Croom, H. B. Catalogue of Plants in the vicinity of Newbern, N. C. 8vo pamph. New York, 1837. From the *same.*

Supplement to the Appendix to Capt. Parry's Voyage. 4to pamph. London. From the *same.*

Lichenes. Auctoribus Julio Meyer et Julio de Floter. 4to pamph. From the *same.*

Sprengel Antonio. Tentamen Supplementi ad Systematis Vegetabilium Linneani editionem decimam-sextam. 8vo pamph. Gottingæ, 1828. From the *same.*

April 15, 1846.

The President in the Chair.

Letters were read from B. L. C. Wailes, Esq., of Washington, Mississippi, and John T. Plummer, M. D., of Madison, Indiana, severally acknowledging the receipt of notice of their election as corresponding members; and from Mr. George Ditson, of Cuba, and M. Tuomey, Esq., accompanying donations.

Mr. Charles Stodder gave a verbal description of some appearances in the strata of *drift*, in a ridge, on the north flank of the hill at South Boston, called Mount Washington, unlike any which had been described, so far as he knew, and which, he thought, could not be accounted for by any of the theories proposed to explain the phenomena of drift.

Mr. Stodder stated that the general form of the ridge is narrow

and elongated, its length being about thirty rods, its width at base ten rods, and its height above tide water, which washes its side, about fifty feet. It runs in nearly an east-and-west direction. Excavations, for the purpose of removing the materials, have been made, which expose sections in all directions. It is composed of regular strata of gravel, clay, and sands, of varying fineness and color. The general appearance of the strata is that they conform to the shape of the hill, dipping outwards in all directions, as far as they are exposed; some of them terminate abruptly upwards, as if denuded, and their edges are overlaid by unstratified materials. The north-west is covered by pebbles, large and small, with coarse gravel; the south-west by finer gravel; the south-east is fine sand, unstratified, so far as can now be seen; and the north-east and north is fine sand stratified. But the most interesting fact presented is, that the strata of sands, clay and gravel are fractured in various directions; many of the fractures causing shifts or faults of the strata. In one section three horizontal fractures are to be seen, one over the other; in another, a fracture, dipping a few degrees from vertical, has caused a fault of about three feet; in another, two fractures, nearly vertical, and about three feet from each other, have caused faults of about two feet each, so that the section presents the strata arranged in echelon. One fracture, in a direction about fifteen or twenty degrees from horizontal, can be traced distinctly twenty-five or thirty feet, cutting all the strata in its course, and making a fault of a few inches in all. The fractures are almost innumerable, and in almost every direction. There are certainly two, if not three, strata of clay; and, in one section, there is exposed, and cut through, nearly in the centre of the mass of the hill, a mass of clay, about eight feet high, and ten feet wide. It is unstratified, and disturbs the stratified sands, with which it comes in contact, as if it had been forced in amongst them.

Mr. S. considered that the indications of all the phenomena presented at this place, justify the inference that the ridge has been produced by a crowding up of the stratified materials, from their original horizontal position, by some powerful force applied laterally.

Prof. C. B. Adams communicated a Memoir on the Mol-

lusca of the Island of Jamaica, with remarks on their geographical distribution and habits, extended descriptions of newly-observed species, and remarks on those already known.

The materials, from which Mr. Adams prepared this paper, were collected by him, personally, during a visit to Jamaica, in the winter and spring of 1843 and 1844. The portion of the island explored was but small, comprising the Bay of Port Royal only on the south shore, and the coast from Annatto Bay, inclusive, to Rio Bueno, a distance of sixty miles, on the north ; and, in the interior, the region between Kingston and Spanish Town, on the south, and Annatto Bay and Galina Point, on the north.

The author states that the differences in the terrestrial species occupying the sandstone, and limestone, districts respectively, is very striking, and the transition instantaneous. *Cyclostoma*, *Helicina* and *Cylindrella* are restricted to the limestone district, as also the larger species of *Bulimus*, *Achatina*, *Pupa* and *Helix;* while the minuter species of the latter genera, and *Succinea*, are, for the most part, common to both. The bases of perpendicular limestone cliffs, and cavernous limestone rocks, were invariably found to afford immense numbers of land-shells. Such places are the favorite retreat of the Colimacea, during seasons of drought ; and here great numbers of their shells were collected. The marine species, inhabiting a rocky station, are also most abundant on limestone rocks. These rocks are worn by the waves into irregular cavities of various dimensions, which afford shelter to multitudes of them.

The profusion in which these animals are distributed, in favorable localities, is shown by the fact that, near a place called Goshen, Prof. Adams obtained forty terrestrial species, within a circuit of two miles in diameter, and on the inner side of the peninsula, one hundred marine species, within a space of two miles from Port Royal.

One of the causes affecting the increase of the terrestrial species, and, at the same time, affording a curious instance of the indirect influence of human agency in disturbing the equilibrium of species, is stated to be their frequent destruction by rats. The cultivation of the coffee plant tends to the excessive multiplication

of rats, which feed upon the pulp of the berry. Their numbers were formerly restrained by the employment of rat-catchers on the coffee estates. Since the emancipation of the slaves, this occupation has been neglected, and the vermin have multiplied to an astonishing degree. Not content with their usual domestic ravages, and the destruction of ripening coffee, they destroy vast numbers of land-mollusks. The shells are found in a fresh state, but with a hole nibbled in one of the whorls for the extraction of the animal. Of a majority of species of *Cyclostoma* and *Helicina*, and of several of *Helix*, which occurred abundantly at Rio Bueno, four fifths of the fresh specimens had been destroyed in this way. As the older shells, which had begun to decompose, were entire, it may be inferred that this agency is of recent date.

Among the notices of the habits of the terrestrial species, Prof. A. mentions the activity with which they move, and the rapidity with which they climb the trees during wet weather, as something that astonishes persons accustomed to the sluggish motions of the species of northern latitudes. The semi-maritime habits of some of the species are noticed. *Cyclostoma maritimum* and *Helicina costata* are examples. Both occur at the water-side, within reach of the spray, and the latter under stones thrown up by the sea. The first is rarely, and the latter apparently never, found in the interior. The species most nearly associated with the latter, in habit, is *Littorina muricata*.

Prof. Adams enumerates the following species, natives of New England, as existing also in Jamaica, viz., *Buccinum vibex*, *Say*, *Cerithium terebrale*, *Limnea umbilicata*, *Helix chersina*, *Pupa contracta*, *Pupa rupicola*, *Modiola barbata*, *Lucina divaricata*.

The following is an abstract of the genera, and of the number of species of each, described in this paper. A remarkable feature in it is the total absence of the *Naiades*. The arrangement, here given, is alphabetical.

Acasta, 1. Achatina, 8. Amphidesma, 2. Ampullaria, 1. Anatifa, 2. Ancylus, 1. Anomia, 1. Arca, 9. Auricula, 4. Avicula, 2. Balanus, 3. Buccinum, 8. Bulimus, 8. Bulla, 4. Calyptrea, 1. Cardita, 1. Cardium, 1. Cassis, 1. Cassidaria, 1. Cerithium, 14. Chama, 1. Chemnitzia, 2. Chiton, 11. Conia, 1. Conus, 3. Crepidula, 2. Cyclostoma, 21. Cylindrella, 9. Cypræa, 6. Cytherea, 4. Dolium, 2. Donax, 2. Emarginula, 1.

Erato, 1. Eulima, 1. Fasciolaria, 1. Fissurella, 10. Fusus, 2. Helicina, 13. Helix, 21. Janthina, 2. Lima, 4. Limnea, 1. Litiopa, 1. Littorina, 10. Lucina, 9. Mactra, 1. Marginella, 1. Melanopsis, 1. Mitra, 5. Modiola, 3. Mytilus, 2. Murex, 5. Natica, 2. Nerita, 4. Neritina, 7. Oliva, 5. Ostrea, 3. Ovula, 1. Paludina, 1. Patella, 5. Pecten, 3. Pectunculus, 1. Pedipes, 1. Perna, 3. Phasianella, 1. Pholas, 2. Physa, 1. Pileopsis, 1. Pinna, 2. Planaxis, 1. Planorbis, 2. Pleurotoma, 15. Plicatula, 1. Psammobia, 3. Pupa, 5. Purpura, 6. Pyrgoma, 1. Pyrula, 1. Ranella, 1. Rissoa, 7. Scalaria, 2. Sigaretus, 1. Solarium, 1. Spirula, 1. Spondylus, 1. Strombus, 3. Succinea, 2. Tellina, 10. Teredo, 1. Thetis, 2. Triton, 6. Truncatella, 3. Turbinella, 3. Turbo, 5. Vaginulus, 1. Venus, 5.

Total of genera, 97.

" of species, 365.

DONATIONS TO THE CABINET.

Specimens of *Paludina piscium*, *D'Orbigny*. From Uruguay, by *J. S. Phillips*, of Philadelphia.

A box of copper ores, from Cuba. By *George Ditson*, of Cuba.

A collection of fossils, from the bluff formation at Natchez, Miss. By *A. Binney*.

ADDITIONS TO THE LIBRARY.

Annals of the Lyceum of Natural History of New York. 8vo. Vol. IV. No. 5. 1846. From the *Lyceum*.

Redfield, John H. Descriptions of New Species of Shells. 8vo pamph. New York, 1846. From the *Author*.

Calcutta Journal of Natural History, conducted by John McClelland. 8vo. Nos. 9 and 12. Calcutta, 1843. From the *Editor*.

May 6, 1846.

ANNUAL MEETING.

T. T. Bouvé, Esq., in the Chair.

Reports from the several Curators, concerning the condition of the respective departments of the Museum, were read. From these it appeared that a gratifying increase had taken place in nearly all of them, and that all the objects were in a good state of preservation. The want of sufficient room for the useful exhibition of the collections was enlarged upon, and the necessity of procuring further accommodations at no distant day was made manifest.

The Librarian made a report on the state of the Library, showing its condition and increase during the past year. The number of volumes, and parts of volumes, added during that time, is one hundred and forty-three. The most valuable of these were procured by purchase, and the year was not distinguished by any considerable donation.

The Treasurer reported upon the financial condition of the Society.

The amount of the permanent fund, well invested, is,	$12,000 00
The ordinary income during the year, derived from fees of admission and annual assessments on the members, were,	530 37
The ordinary expenses for rent, fuel, care of the collections, printing, &c., were,	509 65
Balance in hands of the Treasurer,	20 72
The income of the permanent fund was,	582 50
The balance on hand at the commencement of the year was,	421 88
	1004 38

The expenditure on account of the Journal, Proceedings, Library, &c. . . .	$856 37
Balance on hand	$148 01

The Society then ballotted for officers for the ensuing year, and the following gentlemen were chosen:

President,
Amos Binney.

Vice Presidents,
Charles T. Jackson, D. Humphreys Storer.

Corresponding Secretary,
Augustus A. Gould.

Recording Secretary,
Thomas Bulfinch.

Treasurer,
Patrick T. Jackson, Jr.

Curators,

J. E. Teschemacher,	*Botany*,
Martin Gay,	*Mineralogy*,
Thomas T. Bouvé,	*Geology*,
N. B. Shurtleff,	*Comparative Anatomy*,
Samuel Cabot, Jr.,	*Ornithology*,
Jeffries Wyman,	*Ichthyology and Herpetology*,
T. William Harris,	*Entomology*,
John Bacon, Jr.,	*Conchology*.

Librarian,
Charles K. Dillaway.

Cabinet Keeper,
Henry J. Bigelow.

May 20, 1846.

A. A. Gould, M. D., in the chair.

Professor Jeffries Wyman read a report on the fossil cranium and lower jaw of an extinct Rodent, which had been referred to him for examination; the same which is mentioned on page 103 of this volume.

Professor Wyman considers it to have belonged to the same animal, of which a lower jaw, and an incisor tooth of the upper jaw, were described by Mr. J. W. Foster, one of the assistants in the Geological Survey of Ohio, and to which the name of *Castoroides Ohioensis* has been given. The subject of Professor Wyman's remarks, and those described by Mr. Foster, are the only remains of the animal which have been observed hitherto. The cranium surpasses in size that of any fossil or existing animal, referable to the same order.

On comparing it with other skulls of *Rodents*, it presents some analogies to the genera *Castor*, *Fiber*, and *Hydrochærus*. Osteologically considered, it has stronger affinities with the *Castors*, than with either of the other genera; but, in the dentition, the *type* is totally different from that of the Castors, and not unlike that of the *Hydrochærus;* to the conformation of the pterygoid processes and fossæ, some resemblance exists in the *Fibers*.

It also differs from the *Castors* in the much smaller relative capacity of the cerebral cavity, in the greater depression of the occiput, in the form of the condyles and of the foramen magnum; the former admitting of a free motion vertically, but of a very limited one in a lateral direction, and the latter having an oval form and destitute of an emargination on its upper border; it differs from the Castors, also, in the size of the pterygoid processes and fossæ, especially in the incurvation of the internal ones, and the consequent subdivision of the posterior nares; in the compound nature of the molares, and in the fluting of the anterior face of the incisive teeth; the diminutive size of the incisive foramina, and in the conformation of the lower jaw, with

reference to the insertion of the muscles of mastication. The molares consist of laminæ, the first lower and the last upper tooth each having four, the rest only three; which, as in the elephant and Hydrochærus, consist of dentine enveloped with enamel, and are united together by cæmentum; the number of laminæ, however, in the posterior molares of the Hydrochærus amounts to thirteen, and the interspaces are imperfectly filled with cæmentum, so that the edges are serrated, and in the interior teeth the enamel is more or less involuted; in the Castoroides the number of laminæ does not exceed four, and the cæmentum fills the whole of the interspaces, so that the tooth is destitute of serrated edges.

The internal pterygoid processes, differ from those of all existing genera, having a remarkable curvature inwards towards the median line, the most prominent points coming in contact on the median line, so as to divide the entrance to the posterior nares into two. The internal pterygoid fossæ are deep excavations, as is the case in the Fiber, where the external as well as the internal process is well developed.

The jaw described by Mr. Foster somewhat exceeded in size that described in the present article.

The generic characters, which have been deduced from this cranium, are as follow:

Teeth: Incisors $\frac{1}{1}$ $\frac{1}{1}$, Canines $\frac{0}{0}$ $\frac{0}{0}$, Molars $\frac{4}{4}$ $\frac{4}{4}$, total 20; incisors longitudinally striated in front. Molars consist of thin laminæ of dentine, surrounded by enamel, and the different laminæ united together by crusta petrosa; the first tooth in the upper, and the last in the lower jaw have each four laminæ, and the remaining teeth have only three each. The grinding surfaces of the crowns are nearly flat, but slightly excavated between the ridges of enamel. The internal pterygoid fossæ are largely developed, and the internal processes so far deflected inwards as to meet on the median line, and divide the entrance to the posterior nares transversely, thus forming a superior and an inferior orifice.

DONATIONS TO THE MUSEUM.

Tertiary Fossils from Acquia Creek, Virginia. From *Professor Jeffries Wyman.*

Gray, G. H. Genera of Birds. 4to. Part 25. *Courtis Fund.*

American Journal of Science, for May, 1846. From the *Editors.*

American Quarterly Journal of Agriculture and Science. Vol. III. No. 2. Albany: 1846. From the *Editors.*

Proceedings of the American Philosophical Society, from January to April, 1846. From the *Society.*

June 3, 1846.

D. H. Storer, M. D., Vice President, in the Chair.

Dr. J. B. S. Jackson directed the attention of the Society to a statement made by Professor Owen, in regard to the dentition of the Mastodon. (*Odontography*, p. 615.)

One of the distinctive characters, he says, is a displacement of the first and second molars, in the vertical direction, by a tooth which is developed above them in the upper, and below them in the under jaw, and this has been recognized in the *M. giganteum* and *M. angustidens.* In a note, however, at the bottom of the page, he says: "The presence of the small premolar in the lower jaw has not yet been determined; neither has its absence. An excavation in the jaw of the young mastodon, described by Dr. Godman, at the place where the germ of the premolar is hypothetically stated in Pl. 144, fig. 7, b. 1, would determine this point in regard to the *M. giganteum.*" Dr. Jackson then showed the lower jaw of a young animal, from the Mastodon Collection which is now at Cambridge, and in which, as he formerly observed, (Proceedings of the Society, October, 1845,) the first three molars are developed and above the socket. Below the second of these teeth, and in the outside

of the jaw, corresponding to the situation of Professor Owen's sketch of the premolar, Dr. Jackson had made a large and deep excavation, exposing the fangs of the second tooth, removing some of the bone from between them, and opening freely into the dental canal, but without finding any appearance of the tooth which Professor Owen considers as characteristic of the Mastodon. Dr. Hays, also, in his paper upon the "Inferior Maxillary Bones of Mastodons," &c., (Transactions of the American Philosophical Society, Vol. IV. p. 319,) speaks of having examined about forty lower jaws, but says nothing of such a tooth.

Dr. Jackson then alluded, for explanation, to that part of his former Report upon the Cambridge Collection, (Proceedings of the Society, October, 1845,) in which he speaks of six as the true number of the molar teeth in *M. giganteum*, at least in the lower jaw, and in which he inferred, from a statement of Professor Owen, (Annals of Natural History, Vol. XI. p. 330,) that he considered five as the number; the inference was certainly a fair one. He now finds that in the Odontography, which he had not seen when his Report was made, Professor Owen describes seven molars, generally so called, on each side and in each jaw, but with the saving clause above quoted in regard to the lower. Dr. Jackson's observation, then, as to the number of the molar teeth in the lower jaw, corresponds with that of Professor Owen, except for the "small premolar," of the existence of which no proof has yet been given.

Dr. Gould announced that, being employed in the examination of the Shells collected by the United States Exploring Expedition, commanded by Charles Wilkes, U. S. N., he proposed to read before the Society, from time to time, as they might be prepared, descriptions of the new species, in anticipation of their future publication, in a more extended form, and fully illustrated by figures, as one of the volumes of the great work on the Expedition, issued by Congress.

He commenced with the following species of the genus Chiton.

Chiton lignosus. Testa solidula, ovata, tectiformis, cæsia, lineolis fuscis inequalibus subradiantibus marmorata, systemate duplici punctorum majorum et punctorum minorum impressa; valvis planulatis, angulatis, sine rostris; areis lateralibus haud elevatis, vix distinctis; valvâ anteriori parvâ; valvâ posteriori vix umbonatâ: intus æruginosa. Long. $1\frac{1}{2}$, lat. $\frac{7}{8}$ poll. *Hab.* Puget Sound.

Has the form of C. *setiger*, and somewhat the coloring of C. *fulvus*, Wood. It is also allied to C. *tulipa*, Quoy.

Chiton quercinus. Testa depressa, ovalis, vix carinata, quercina, maculis olivaceis nubeculata; valvis subrostratis; areis lateralibus vix elevatis, longitudinaliter sulcatis, sulcis incumbentibus et sulco radiante bisectis; areis centralibus ad latera lineis rugosis longitudinaliter sculptis, ad dorsum punctatis; valvâ anteriori sulcis concentricis et sulcis radiantibus remotioribus decussatâ; valvâ posteriori prope marginem umbonatâ; margine lato, pruinoso, flavescente. Long. $\frac{7}{8}$, lat. $\frac{3}{5}$ poll. *Hab.* New South Wales.

Allied to C. *foveolatus*, Sowerby.

Chiton jugosus. Testa ovalis, carinata, tectiformis, nitida, coloribus pallidè et saturatè herbeis variegata; valvis planulatis, ad apices adunco-acuminatis; areis lateralibus prominentibus, et lineolis confertis parallelis viridibus longitudinaliter notatis; areis centralibus sulcis acutis parallelis longitudinaliter aratis, sed ad verticem simplicibus et minutissimè punctatis; valvâ anteriori concentricè lineolatâ; valvâ posteriori umbonatâ, prope marginem concentricè lineolatâ, præter aream terminalem triangularem luteolam; margine granulato, fasciis cæruleis et viridibus limbato: intus pallidè virescens. Long. 1, lat. $\frac{3}{5}$ poll. *Hab.* New South Wales.

Resembles C. *Siculus*, which, however, has radiating lines on the lateral areas.

Chiton fruticosus. Testa ovalis, valdè elongata, transversim arcuata, omnino textiliter punctata, olivacea, maculis minutis saturatioribus fulgurantibus variegata; valvis haud rostratis; areis lateralibus prominentibus, et lineis elevatis interruptis ramosis radiatis; areis centralibus lineis longitudinalibus rugosis, ad latera profundis, ad dorsum evanidis et arcuatis sculptis; areâ posteriori magnâ, umbonatâ, lineis inconspicuis, interdum divaricatis, radi-

atâ : intus flavo-olivacea : ligamentum latum, pallidum, minutissimè granulatum. Long. $1\frac{1}{2}$, lat. $\frac{5}{8}$ poll. *Hab.* New South Wales.

Resembles fig. 61 of Sowerby's Conch. Illustr., which is said to be a variety of C. *Indicus*, but which has no ramose sculpture on the lateral areas.

Chiton platessa. Testa parva, tenuis, elongato-ovalis, transversim arcuata, citrino-olivacea, ubique minutissimè punctata; areis lateralibus parvis, vix elevatis, lineis 2–3 inconspicuis striatis; areis centralibus lineis confertis acutis granulatis arcuatim decussatis; valvâ posticâ magnâ, obscurè radiatâ; margine virente, fusco tessellato, minutissimè granulato: intus cæruleo-virescens. Long. $\frac{7}{8}$, lat. $\frac{9}{20}$ poll. *Hab.* New South Wales.

Similar in its general aspect to C. *fruticosus*, but smaller, smoother, and the sculpture of the lateral areas and terminal valves entirely different. It is almost exactly like fig. 67 of the "Conchological Illustrations."

Chiton jaspideus. Testa ovata, tenuis, carinata, ubique minutissimè punctata, coloribus rosaceis plus minusve saturatis picta; areis centralibus lineis minutis granosis confertissimè striatis; areis lateralibus indistinctis, et lineis 3 ad 4 sparsè granuosis radiatim notatis; valvis terminalibus granoso-striatis, posticâ excavatâ; margine coriaceo, pruinoso. Long. 1, lat. $\frac{7}{10}$ poll. *Hab.* Callao.

Resembles, in size, shape, and sculpture, C. *apiculatus*, Say; but the sculpture is more delicate, and the color, resembling some varieties of jasper, is quite distinctive.

Chiton puniceus, (Couthouy MS.) Testa parva, oblongo-elliptica, elevata, ad dorsum carinata, punctatissima, punicea, gradibus ætatis conspicuis obtusis signata: areis lateralibus præruptè elevatis, et sparsim granulatis; areis centralibus costulis longitudinalibus parallelis ad 6, plerumque ad medium dislocatis, clathratis; valvâ posteriori rostro parvulo acuto et septo transversali notato: ligamentum minutissimè imbricatum, adversum suturas albido fasciatum. Long. $\frac{1}{2}$, lat. $\frac{3}{10}$ poll. *Hab.* Orange Harbor.

Very much resembles C. *ruber*, Lowe.

Chiton confossus. Testa parva, ovata, fastigiata, pallida,

roseo et incarnato concinnè variegata ; valvis rostratis ; areis lateralibus elevatis, serie posticâ squamârum et serie obliquâ squamârum majorum ad apicem spectantium finitis ; intervallo lævigato, et granulis paucis annulatis sparso ; areis centralibus plerumque lævibus sed punctis sparsis triangularibus retrospectantibus confossis ; valvâ posteriori valdè gibbosâ, umbone ferè terminali, dentibus insertionis 9, et ad valvam anteriorem 25, pectinatis : margine fusco, carnoso. Long. $\frac{5}{8}$, lat. $\frac{3}{8}$ poll. *Hab.* Feejee Islands.

Allied to C. *sculptus*, Sowb., which has three lateral rays and the central areas smooth.

Chiton pruinosus. Testa parva, oblongo-elliptica, convexo-elevata, subcarinata, coloribus variis olivaceis, cinereis, et fusco-rubris irrorata et maculata ; areis centralibus sub lente omnino quincuncialiter punctatis ; areis lateralibus longitudinaliter imbricato-striatis : intus virescens : margo minutissimè granulatus, coloribus fuscis et cinereis tessellatus. Long. $\frac{7}{10}$, lat. $\frac{7}{20}$ poll. *Hab.* Rio Janeiro.

The sculpture of this very variably-colored species is sufficiently characteristic. Between the striæ are usually found minute pores, probably produced by some parasite.

Chiton viridulus, (Couthouy MS.) Testa tenuis, oblongo-ovata, dilutissimè olivacea, ad dorsum sub-carinata, utrinque subcanaliculata, ubique sub lente quincuncialiter insculpta ; areis centralibus et lateralibus parum distinctis ; lineis incrementi prope marginem conspicuis ; valvis terminalibus leviter radiatis : margo minutissimè squamatus. Long. $\frac{3}{5}$, lat. $\frac{7}{20}$ poll. *Hab.* Orange Harbor.

Chiton petaloides. Testa parva, tenuis, ovalis, arcuatim elevata, subcarinata, dilutè citrina ; areis lateralibus elevatis, rugosè granulatis, et striis radiantibus ad 4 insculptis ; areis centralibus longitudinaliter rugosè granulato-punctatis, et lineolis tenuissimis angulatis dilutè violaceis pictis ; valvâ posteriori acutè umbonatâ et costâ transversali divisâ : margo stramineus, minutissimè granulato-imbricatus. Long. $\frac{1}{2}$, lat. $\frac{2}{5}$ poll. *Hab.* Sandwich Islands.

A very beautiful and peculiar shell, its markings resembling the venated petals of some flowers.

Chiton dentiens. Testa minima, ovata, carinata, olivacea, ad dorsum albido fulminata, omninò minutissimè granulata; areis vix distinctis; valvis rostratis postice subdenticulatis, dentibus albidis: margo pruinosus. Long. $\frac{1}{5}$, lat. $\frac{3}{20}$ poll. *Hab.* Puget Sound.

Resembles C. *alternatus*, Sowb., which, however, has radiating ribs upon its lateral areas and terminal valves.

Chiton incanus. Testa solida, oblongo-ovalis, valdè convexa, cinereo et nigro variegata, concentricè undulato-striata, granulis sparsis nigris aspersa, ad dorsum subcarinata et longitudinaliter nigro bifasciata; areis lateralibus vix distinctis: margo aculeis inequalibus curtis curvatis nigris et canescentibus indutus. Long. $1\frac{3}{10}$, lat. $\frac{3}{4}$ poll. *Hab.* New South Wales.

Like C. *piceus*, Gray, in general appearance, and still more like C. *petholatus*, which has a hairy margin.

Chiton muscosus. Testa ovalis, depressa, scabra, ad dorsum obtusa, cinereo bifasciata et plumosè striata; valvis magnis, lateraliter disjunctis; areis lateralibus parvis, granulis subquadratis radiantibus arcuatim tessellatis; areis centralibus sulcis acutis confertis flexuosis subparallelis longitudinaliter aratis; valvâ anticâ magnâ, semicirculari, decemcostatâ et granulis subquadratis insculptâ; valvâ posteriori parvâ, costâ transversali inconspicuâ subterminali: margo latus, filis corneis inequalibus muscosis indutus. Long. 2, lat. $1\frac{1}{8}$ poll. *Hab.* Puget Sound.

Allied to C. *brevispinosus*, but its sculpture and margin are quite distinct.

Extracts from a letter from Zadock Thompson were read, announcing the discovery, in the State of Vermont, of *Tryonyx ferox* and *Cottus gobio.*

Dr. D. H. Storer exhibited a drawing of *Gasterosteus biaculeatus*, made from a specimen taken at Nahant.

DONATIONS TO THE MUSEUM.

A jaw of Carcharias obscurus. From *Dr. D. H. Storer.*

ADDITIONS TO THE LIBRARY.

Thesaurus Conchyliorum. By G. B. Sowerby. Nos. 3 to 6. 8vo. London: 1843 to 1846. *Courtis Fund.*

Lettre à M. Ph. Fr. de Siebold, sur les Collections Ethnographiques, &c. 8vo pamph. Paris, 1845. From *M. Jomard.*

Seconde Note sur une Pierre Gravée trouvée dans un ancien tumulus Americain. 8vo pamph. Paris, 1845. From *same.*

Annual Report of the Regents of the University of New York, for 1846. Albany, 1846. From the *Regents.*

Storer, D. H., M. D. Synopsis of the Fishes of North America. 4to. Boston, 1846. From the *Author.*

June 17, 1846.

C. T. Jackson, M. D., in the Chair.

Mr. John E. Teschemacher read a paper on Fossil vegetation, and particularly on that of the coal formations of North America.

He applied to this subject the discoveries of Liebig, of Dumas, and Boussingault, in which the atmosphere is considered as the connecting link between vegetables and animals, the former being the reducing, the latter the consuming force, and argued that the existence of the vegetable as coal, proved the non-existence of the consuming force or animals, and also showed the probability of a different atmosphere at that period.

He stated the importance of collecting the fossil vegetation of this continent, and comparing it with that of the other continents, in order to establish a uniformity of vegetation, and with it a uniformity of climate for its growth; connecting with this the fourth law of Professor Pictet, on the distribution of animal fossil remains, tending to exhibit a gradual decrease of the area of this uniformity of climate from the earliest organic existence, the vegetable, through the various succeeding epochs of animal life.

He touched on the value of the labors of Presl and J. Smith, of Kew, on recent ferns, to the student of fossil filices, and on the necessity which the result of further discoveries and investigations, would produce for the amelioration of the present method of arrangement of fossil vegetation. He also exhibited drawings

of Odontopteris Brardii, and some probably new Odontopterides, from the black schist, Portsmouth, R. I., and of various other fossil vegetation, from Mansfield, Mass., and from Nova Scotia, with a list of fossil vegetables from various American localities.

Dr. C. T. Jackson exhibited specimens of Copper and Zinc Ores, from Warren, N. H., considered by him to be remarkable in their structure and appearance.

The copper Pyrites occurs intermixed with crystallized Tremolite, and brown mica, and takes the form of those minerals, being fibrous in the Tremolite, and flattened into plates in the mica. The black blende exhibits the same structure, and the iron Pyrites is also impressed with the form of the fibrous Tremolite, also crystals of an octahedral form, composed of yellow copper pyrites and black blende. He remarked that this impressibility of one mineral by another, seemed something like the influence of example as exhibited in another department of science, and the power of numbers was evidently perceptible in the compression of the more sparse ores, amid these congeries of Tremolite crystals and micaceous plates.

Specimens of rich argentiferous galena, from Warren and Shelburne were exhibited, those from the latter town being associated with cuperiferous black blende, and beautiful crystals of iron Pyrites. The lead from these ores contains from 4 to $5\frac{1}{2}$ pounds of silver per ton, a sufficient proportion to warrant its extraction by cupellation. The mines are about to be wrought for lead and silver. He exhibited also specimens of twisted crystals of rutile or red oxide of Titanium, and bright green crystals of Apatite or Phosphate of Lime, from the Warren copper mine, the latter being a new mineral for that locality.

Dr. Jackson also remarked upon a paper on the geology of a portion of the White Mountains, by Professors W. B. and H. D. Rogers, published in the American Journal of Science, for May, 1846.

He said that it was his intention, during his late visit to New Hampshire, to have examined the spot, where, as stated by those

gentlemen in the paper referred to, they had discovered fossils in the masses of slate included in the primary rocks of the White Mountain range, but for want of time was obliged to defer it to some future occasion. He would merely remark, at present, that he could not agree with the Messrs. Rogers in the latitude they gave to the metamorphic theory, and thought he could satisfy any geologist that the White Mountains were not formed of melted sandstones and slates, for he could point out localities there where numerous fragments of slate are included in the granite, and are not altered by heat beyond mere induration. He was so impressed with this fact that he had in his Report endeavored to account for it, by the imperfect conduction of heat in the fused granitic rocks.

The Messrs. Rogers seem to have overlooked the statement, in his Final Report on the Mineralogy and Geology of New Hampshire, that *numerous masses of the older silurian strata occur intercalated in the primary rocks.* If they have discovered fossils in them, the fact would go to confirm his original views on that subject, and it would be quite interesting to observe fossils, which, like the fabled salamanders had gone through so fiery an ordeal. Nevertheless, to use an expression of M. De Blainville, *il faut que le fait soit bien constaté.*

Dr. Gould continued his descriptions of new Shells, collected by the United States Exploring Expedition, and belong to the genus Patella.

Patella talcosa. Testa magna, solida, ponderosa, ovato-rotundata, depressa, costulis radiantibus numerosis sub-equalibus rotundatis flexuosis instructa, vertice sub-centrali, colore saturatè cinnamomeâ ; facies interna talcoso-argentata, purpureo tincta ; callo centrali crasso, albo, spatuliformi, ad marginem radiato ; impressione musculari lato, profundo : margo crenulatus. Long. 4, lat. $3\frac{1}{2}$, alt. $1\frac{3}{4}$ poll. *Hab.* Hawaii, Sandwich Islands.

The colors of the interior, in small specimens, are very rich, and the shell is of a rounded shield-like form, like P. *testudinaria*, attaining sometimes a very large size, larger than any other species except P. *pyramidata.*

Patella sagittata. Testa tenuis, translucida, ovato-rotundata,

depressa, fusco-viridis, nigro obscurè radiata, subtilissimè granuloso-striata, apice antico, acuto, incumbente ; margine integro : facies interna argentea, cum reflexionibus succineis, et interdum fusco radiata ; fundo (luce transmisso) elegantissimè reticulato, et maculis sagittatis radiato. Long. $1\frac{1}{3}$, lat. $1\frac{1}{10}$, alt. $\frac{2}{5}$. *Hab.* Feejee Islands.

This delicate and beautiful species is allied to P. *testudinaria*, but is more depressed and more delicate in all its characters, and its peculiar marking, as seen by transmitted light, like some of the Navicellæ, distinguishes it. It was the only species collected at the Feejee Islands.

Patella illuminata. Testa inequilateralis, ovato-conica, fuliginosa, maculis sparsis flavidis translucidis illuminata, creberrimè radiatìm costellata : apertura ovata ; facies interna nigro-picea, sericeo splendens ; fundo flavido. Long. $1\frac{1}{2}$, lat. $1\frac{1}{4}$, alt. $\frac{3}{5}$ poll. *Hab.* Auckland Islands.

In shape like P. *argentea*, with the interior of P. *tramoserica*. It may be the young of what is figured by Quoy as P. *granularis*.

Patella fimbriata. Testa elevata, obliquè conica, fusco-purpurea, cinereo tincta, costulis distantibus rotundatis radiata, costulis tuberculos fornicatos in seriebus concentricis instructos gerentibus ; apice acuto subcentrali : apertura ovata, limbo lato, nigro pectinato : facies interna nitida, cæruleo-alba, secundum costulos radiata, fundo saturatiori. Long. $1\frac{1}{5}$, lat. $\frac{19}{20}$, alt. $\frac{9}{20}$. *Hab.* Straits of De Fuca.

Much like a small P. *granularis* in shape. The undulations within, corresponding to the ribs, are marked with unusual distinctness. Its ribbed surface and destitution of striæ distinguish it from all the varieties of L. *pintadina*.

Patella citrullus. Testa depresso-conica, sub-equilateralis, translucida, extus rugoso-undulata, prope apicem lineis granuliferis radiata, pallidè olivacea, intus nitida, plumbea, fundo albido : apertura rotundato-ovata ; margine expanso, acuto. Long. $1\frac{3}{4}$, lat. $1\frac{1}{4}$, alt. $\frac{1}{4}$ poll. *Hab.* Funchal, Madeira.

This shell resembles somewhat the skin of a cucumber, externally. The radiating striæ occupy the upper half of the shell, and the lower half is somewhat imbricated by the stages of growth. It is somewhat like P. *Candei*, D'Orb.

Patella Paumotensis. Testa solida, albido-cinerea, ovalis, depresso-conica, apice sub-centrali, costis acutis radiantibus irregularibus ad 40 instructa : facies interna alba vel dilutè incarnata ; impressione musculari callosâ, albâ vel citrinâ ; areâ centrali ferrugineâ vel incarnescente : margo costis dentatus, spatiis intercostalibus fusco tinctis. Long. $1\frac{2}{3}$, lat. $1\frac{1}{2}$, alt. $\frac{1}{2}$ poll. Feejee's. Long. $1\frac{3}{5}$, lat. $1\frac{1}{4}$, alt. $\frac{3}{5}$ poll. Wilson's I. Long. $1\frac{1}{5}$, lat. 1, alt. $\frac{2}{5}$ poll. Rose I.

Allied to P. *tramoserica*, but its colors are generally dull and dead, instead of silky. Generally, eight or ten of the ribs are more prominent than the rest The prevailing color of the interior is that of ripe muskmelon. Sometimes there are dusky spots between the ribs. It seems to be found at all the islands of the Paumotu group, and as far as Taheiti.

Patella luctuosa. Testa obliquè conica, crassa, vertice eccentricâ, obscurè olivacea, interdum sanguineo tincta, costis majoribus ad 12 rotundatis, scabrosis, pallidis, minoribus quibusdam interjectis : apertura ovalis ; margine crenulato : facies interna livida, reflexionibus succineis micans ; limbo fasciis fuscis et albidis inequalibus alternantibus radiato. Long. $1\frac{1}{4}$, lat. 1, alt. $\frac{1}{2}$ poll. *Hab.* New Zealand.

Unusually rough and irregular of surface, not unlike coarse specimens of P. *vulgata*, but the interior sometimes rivals P. *tramoserica*.

Patella piperata. Testa scabrida, obliquè conico-depressa, olivacea, costato-striata, costis majoribus pallidioribus cum lineis saturatioribus interruptis aspersis, apice eccentricâ, acutâ : apertura ovata ; margine crenulato ; facies interna livida, fundo ferrugineo, radiis albidis insigni. Long. $1\frac{1}{5}$, lat. $\frac{9}{10}$, alt. $\frac{1}{2}$ poll. *Hab.* Cape de Verds and Madeira.

Somewhat like what I suppose to be P. *scutellaris*, from the Mediterranean, especially its interior, but more elevated and less elongated.

Patella instabilis. Testa olivaceo-cervina, elongata, elevata, ad latera compressa, creberrimè radiatim striata, apice subcentrali, obtusâ, castaneâ : apertura oblongo-elliptica ; margine integro : facies interna lactea. Long. $1\frac{1}{2}$, lat. $\frac{17}{20}$, alt. $\frac{8}{10}$ poll. *Hab.* Puget Sound.

Resembles P. *compressa*, but is more smooth and solid, and the apex more nearly central. It may have derived its form from being attached to some arched body.

Patella cinnamomea. Testa parva, ovalis, convexa, tenuis, cinnamomea, cum striis radiantibus, tenuibus, confertissimis, imbricato-asperis, apice acuto, antico, ad marginem valdè declinato; aperturæ margine anteriori excurvato, intus costâ albâ marginali munito. Long. $\frac{1}{2}$, lat. $\frac{3}{8}$, alt. $\frac{9}{40}$ poll. *Hab.* New South Wales.

Closely allied to P. *Galathea*, Lam. which, however, is snow-white, more circular, the apex more central, and the striæ much coarser.

Patella conica. Testa parva, conoidea, elevata, valdè regularis, inornata, vel lineolis obsoletis radiantibus et concentricis striata; colore luteo-cinereo: apertura rotundata, margine simplici, limbo marginali planato. Long. $\frac{4}{2}\frac{5}{8}$, lat. $\frac{1}{2}$, alt. $\frac{3}{8}$ poll. *Hab.* Puget Sound.

Similar to P. *scurra*, Lesson, but is more elevated, less symmetrical, and more delicate in structure and markings, especially in the radiating striæ.

Lottia pintadina. Testa diversissimè figurata et picta, tenuis, ovato-rotundata, radiatim et confertim striata, smaragdina, interdum fuscescens vel cinerascens, maculis crebris albidis tessellata aut radiata; apice plerumque sub-centrali, plus minusve elevatâ: facies interna cœruleo-albida, nitens; fundo piceo; limbo lato, piceo et albido tessellato. Long. 2, lat. $1\frac{3}{5}$, alt. $\frac{3}{5}$ poll. *Hab.* Straits of De Fuca, Puget Sound, and Mouth of Columbia River.

This very variable species is the analogue of L. *testudinalis* of the North Atlantic waters, though larger. Two well-marked varieties may be noted. One tessellated with about equal proportions of green and whitish, the interior marginal limb broad and tessellated, the dark color predominating. In the other the colors are arranged rather in stripes, the internal limb is narrower, and the light color predominates. Very probably L. *scutum*, Esch. is only another variety.

Lottia cymbiola. Testa solida, depresso-conica, arcuata (apice eccentricâ) glauco et fusco-olivaceo radiata, radiatim creberrimè puncto-striata: apertura elliptica, margine minutissimè

crenulato: facïes interna, albida, spadiceo sordidata; limbo lato, fusco et albo tessellato. Long. $\frac{9}{10}$, lat. $\frac{7}{10}$, alt. $\frac{3}{10}$ poll. *Hab.* Bay of Valparaiso.

A small, rather smooth shell, arched in every direction, in consequence of attaching itself to other shells. When fresh it is very prettily radiated.

Patella (Lottia?) textilis. Testa depressa, obliquè conica; apice anteriori, acuto; costis latis, elevatis, subplanulatis, nodosis ad 15 radiantibus; epidermide viridi, punctis albidis quadratis reticulato: basi ovato-rotundato, limbo marginali albido et fusco-viridi fimbriato: facies interior albida; fundo piceo. Long. 1, lat. $\frac{3}{4}$, alt. $\frac{3}{10}$ poll. *Hab.* Straits of De Fuca and Killimook.

Like some varieties of P. *viridula;* but its base is less orbicular, its color is darker green, and the reticulations are finer and less in zigzag; the ribs are less numerous, nodular, and not paler. Its remote locality favors the idea of its being distinct.

Patella (Lottia?) scabra. Testa parva, scabra, per-inequilateralis, obliquè arcuato-conica, pallidè virens, nigro diversemodè virgata, costis radiantibus scabrosis ad 15 ornata; basi ovatâ: facies interna albida; fundo piceo, limbo marginali viridulo et piceo fimbriato. Long. $\frac{7}{8}$, lat. $\frac{5}{8}$, alt. $\frac{3}{8}$ poll. *Hab.* San Francisco.

About the same size, and may be only a variety, of P. *textilis.* Its arched form, rough surface, coarse black stripes, and different locality, seem to warrant its separation.

Patella (Lottia?) araneosa. Testa parva, tenuis, depresso-conica, sub-equilateralis, lævis, pallidè virescens, ramulis rubiginosis araneosis reticulata: facies interna albida; margine simplici, acuto; limbo marginali planulato, rubiginoso, radicoso. Long. $\frac{5}{8}$, lat. $\frac{1}{2}$, alt. $\frac{1}{4}$ poll. *Hab.* Sooloo Sea.

A pretty little shell, most probably a Lottia, resembling some of the species figured by Quoy, especially his *orbicularis.* Indeed it is so like the reticulated variety figured in Pl. LXXI. fig. 33, that the examination of a more extensive series might show them to be identical.

Rev. Joseph Banvard was elected a member of the Society.

ADDITIONS TO THE LIBRARY.

Proceedings of the Providence Franklin Society, Vol. I. Part I., for April, 1846. From the *Society*.

July 1, 1846.

A. A. Gould in the Chair.

A letter from George Ditson, Esq. of Neuvitas, Cuba, accompanying a donation, was read.

Dr. Gould described the following new species of Siphonaria, Emarginula, and Fissurella, from the Shells of the Exploring Expedition.

SIPHONARIA CORNUTA. Testa rudis, fuliginosa, valdè depressa, per-inequilateralis, radiatim striata, apice submediano, costis ad 15 inequalibus, ultra marginem prolongatis, præcipuè costâ suprasiphonali: cavitas parva, minimè profunda, dextrorsum effusa; limbo marginali expanso, albo, vel fusco inter costas radiato. Long. 1, lat. $\frac{17}{20}$, alt. $\frac{1}{5}$ poll. *Hab.* Mangsi Islands.

Allied to S. *atra*, to which it may possibly be traced by its varieties; but it is more elongated, less symmetrical, and the ribs, which are much more numerous on the left than on the right side, surpass the margin to a much greater extent.

SIPHONARIA INCULTA. Testa parva, crassa, irregularis, depresso-conica, costulis 20–24 radiata; apice sub-centrali: cavitas profunda, latere sinistro præcipiti, latere dextro declivi; fundo fusco nubeculato; cicatrice musculari profundâ; limbo marginali expanso, sericeo, hepatico; margine costulis dentato. Long. $\frac{7}{10}$, lat. $\frac{11}{20}$, alt. $\frac{1}{4}$ poll. *Hab.* New Zealand.

A small, rugged-looking species, easily distinguished by its irregular, one-sided form, and its liver-brown interior.

SIPHONARIA LATERALIS, (COUTHOUY MS.) Testa parva, fragilis, inequilateralis, perobliqua, oblongo-ovalis, olivacea, sursum

fuscescens, costulis radiantibus ad 25 obtusis, nodosis, subequalibus: intus hepatica; cicatrice musculari inconspicuâ. Long. $\frac{3}{5}$, lat. $\frac{2}{5}$, alt. $\frac{1}{5}$ poll. *Hab.* Burnt Island, Orange Harbor.

This might be regarded as the young of S. *Lessoni*. But besides essential differences in the animal, the great inequality of the two sides, the peculiar position of the apex and the more coarse and nodular ribs, give it a peculiar character.

Siphonaria lepida. Testa parva, tenuis, ovato-rotundata, depresso-conica, cinereo-olivacea interdum violaceo tincta; apice submediano, obtuso; costis radiantibus numerosis depressis, quorum ad 12 majoribus, albicantibus; striis incrementi confertis, laxis: intus livida, albido radiatim lineata; margine vix crenulato, pallescente. Long. $\frac{9}{20}$, lat. $\frac{7}{20}$, alt. $\frac{3}{20}$ poll. *Hab.* Rio Janeiro.

Allied to S. *plicata*, Quoy, which, however, is described as solid, its summit recurved, its ribs equal, its interior pale horn color, radiated with pairs of reddish lines, and is found at Tongataboo.

Siphonaria normalis. Testa parva, tenuis, symmetrica, basi rotundata, elevato-conica, fusco-cinerea, creberrimè costato-striata, striis subequalibus: subtus fundo castaneo, limbo marginali mustelino, cicatrice benè impresso; margine acuto, ad canalem siphonalem angulato, albido lineolato. Long. $\frac{4}{10}$, lat. $\frac{7}{20}$, alt. $\frac{3}{20}$ poll. *Hab.* Sandwich Islands.

A small, delicate species, very different from any I have seen. Its circular base, regular conical form, very numerous rib-striæ, and peculiar pale chocolate color distinguish it.

Emarginula aspera. Testa parva, tenuis, depresso-conica, fuliginosa; costis elevatis quadratis plerumque duplicibus ad 10 albidis, ad intervallos striis crebris decussantibus exasperatis; vertice subcentrali, acuto, recurvo: intus glauca, albido radiata; margine denticulato: incisura angusta, profunda, intus in canalem versus apicem producta. Long. $\frac{4}{10}$, lat. $\frac{3}{10}$, alt. $\frac{3}{20}$ poll. *Hab.* Sydney, New South Wales.

Much like E. *rugosa*, Quoy, in size and form, but differs in color, sculpture, and the larger size of the notch.

Emarginula fungina. Testa parva, solidula, elliptica, cinereo-virens; costis radiantibus, parvulis, quarta quaque majori, rotundatis; apice mediani, erecto: intus viridula, cicatrice mus-

cular intrinsecus atri-limbatâ ; margine smaragdino, eleganter crenulato : incisura lata, modicè profunda, intus in canalem ad verticem producta. Long. $\frac{1}{2}$, lat. $\frac{3}{8}$, alt. $\frac{1}{5}$ poll. *Hab.* Upolu.

A very pretty species, somewhat resembling E. *parmophoidea*, Quoy, but differs in the dark coloring along the inner margin of the muscular impression, forming the figure of a toadstool, and in the greater development of the notch.

Emarginula ossea. Testa crassa, rudis, albida, quadrangulari-elliptica, costis radiantibus numerosis inequalibus acutis, et striis incrementi decussata ; basi arcuato, margine crenulato ; cicatrice musculari benè impressâ : incisura haud profunda, intus vix in canalem producta. Long. $\frac{6}{10}$, lat. $\frac{9}{20}$, alt. $\frac{3}{10}$ poll. *Hab.* Feejee Islands.

Allied to E. *australis*, Quoy, but is much smaller and less deeply checkered.

Emarginula cinerea. Testa cinerea, E. *osseo* similis, sed tenuior, altior, magis dispositè et delicatè clathrata : cicatrice musculari inconspicuâ : incisura minimè profunda, in canalem interiorem valdè insignem producta. Long. $\frac{5}{8}$, lat. $\frac{4}{8}$, alt. $\frac{3}{8}$ poll. *Hab.* ——— ?

Similar to the preceding, but far less solid, and much more regularly and delicately cross-barred ; and if the size of the notch, the development of its canal, and the depth of the muscular impression, are important characters, they are certainly distinct species.

Fissurella cratitia. Testa solida, elevata, ovalis, albida, radiis fuscis ad 16 picta, lineis elevatis radiantibus et concentricis sub-equalibus profundè imbricato-cancellata : apice sub-centrali, intus alba ; margine inequaliter crenulato : foramen apicalis sub-rotunda. Long. 2, lat. $1\frac{2}{5}$, alt. $\frac{1}{2}$ poll. *Hab.* Puget Sound.

It has the general aspect of F. *maxima*, but is sculptured like F. *Græca*.

Fissurella verna. Testa solida, striata, ovalis, symmetrica, depresso-conica, cinereo-viridescens, atro-purpureo radiata, costis ad 20-30 sub-elevatis, planis, interstitiis adequantibus ; vertice subcentrali, purpureo : fissura parva, ovalis ; margine crenato : intus alliacea, fissuræ limbo radiatim striato, purpureo marginato. Long. $1\frac{2}{5}$, lat. $1\frac{1}{5}$, alt. $\frac{1}{2}$ poll. *Hab.* Port Praya, St. Jago Island, Cape de Verds.

Much like F. *obtusa*, Sowb., but more elongated, and with its ribs, more numerous rays and faintly scolloped margin, as well as its distant locality, it may be regarded as a different species. Some specimens are not rayed, and others are entirely dark purple.

Fissurella occidens. Testa ovata, conica, valdè elevata, radiatim multistriata, fasciis atro-purpureis ad 15 et fasciis rosaceis alternantibus radiata, apice subcentrali: apertura ovata: facies interna nivea, margine latiusculo viridulo fusco tessellato: fissura ovali-rotundata. Long. $1\frac{3}{10}$, lat. $1\frac{1}{10}$, alt. $\frac{11}{20}$ poll. *Hab.* Callao.

In shape and color it agrees with F. *caffra*, Chem., from the Cape of Good Hope, and also with F. *Praya*, Quoy. It is remarkable for its elevated, conical form, and dark, radiate exterior.

Fissurella cruciata. Testa parvula, tenuis, nitida, elongato-ovata, arcuatim elevata, costulis radiantibus prominentibus ad 30, cum filis confertis, ordinatis, concentricis decussata; apice anteriori, fissurâ elongatâ; coloribus nigris et albis cruciatim signata: intus nitida, livido et albo similiter picta; margine crenulato. Long. $\frac{2}{5}$, lat. $\frac{1}{4}$, alt. $\frac{1}{8}$ poll. *Hab.* Sooloo Sea.

Similar to F. *minuta*, Sowb., but nearly twice as large, proportionally broader and more elevated, and with the sculpture more in relief; the blue circles about the fissural callus are also wanting.

DONATIONS TO THE CABINET.

Copper and Tin ores from Cuba, and Cinnamon stone from Ceylon. From *George Ditson, Esq.*, of Cuba.

Cranium of a Rodent. From *same.*

Skins of *Pyrrhula raptor*, *Psaris erythrogenys*, *Lanius rubiginosus*, and *Psittacus menstruus.* From *Dr. S. Cabot, Jr.*

ADDITIONS TO THE LIBRARY.

Milne-Edward M. Histoire Naturelle des Crustacées. 3 vols. 8vo, plates. Paris, 1834. From the *Courtis Fund.*

Straus-Durckheim, Hercule. Traité d'Anatomie Comparée. 2 vols. 8vo. Paris, 1843. *Same.*

Sander Rang. Manuel des Mollusques et de leurs Coquilles. 18mo. Paris, 1829. *Same.*

Gould, John. Monograph of the Odontophorinæ, or Partridges of America. Part II., folio. London, 1846. *Same.*

Gray, George R. Genera of Birds. No. 26, folio. London, 1846. *Same.*

Annals and Magazine of Natural History, for June, 1846. 8vo. London. *Same.*

American Journal of Science and Art. New Series. 8vo. No. 4. New Haven, July, 1846. From the *Editors.*

July 15, 1846.

The President in the Chair.

Letters were read from Caleb G. Forshey, Esq., of Vidalia, La., and John G. Norwood, M. D., of Madison, Ind., severally acknowledging the notice of their election as corresponding members; and from B. B. Brown, M. D., of St. Louis, accompanying a donation.

A letter from Professor Oliver P. Hubbard, of Dartmouth College, relating to a singular diseased affection of the perch, *Perca flavescens*, was read.

It appeared from information received by Prof. Hubbard, that about sixteen years since, this fish was transferred by Mr. M. C. McClure, of Ackworth, N. H., from Warren's Pond, in Alstead, to Cold Pond, ten miles further north, in Ackworth and Unity, the last named pond being at that time destitute of this species. Both ponds are at this time well stocked with it, but the perch of Cold Pond are not edible by reason of numerous cartilaginous concretions which are diffused throughout the body of the fish, while those in Warren's Pond, from which they are derived, have never exhibited this peculiarity. These concretions are

indicated by a blue spot, when they are near the surface. There is an accumulation of them near the base of the tail, and they are scattered more or less through the fin and tail.

Prof. Hubbard also remarked upon two instances of extraordinary elongation and distortion of the incisor teeth of the woodchuck, which had lately come under his observation.

In one case the incisors are deflected to the right, and pass downwards, backwards and upwards, so that the vertex of that of the right side is in a line with the zygoma, and rises above it, while that of the left side has entered the maxillary bone of the right side a little in advance of the molar teeth, and under the infra-orbital foramen which it has displaced upwards, and penetrated to the lower part of the alveolus of the right incisor, overlapping its base about one fourth of an inch. The vertex of each is somewhat chisel-shaped, but with the cutting edge on the inside. The left incisor only is considerably worn upon its left side near the insertion into the jaw, as if by friction against the incisor of the lower jaw. The right incisor measures about 4 inches in length on its curve; diameter of the spiral, $\frac{13}{16}$ inch; extent, 1 circle and half an inch; length of alveolar portion, $1\frac{3}{16}$ inch; vertex, $\frac{3}{4}$ inch, to the right of the median line of the roof of the mouth. The left incisor is only $\frac{3}{8}$ inch distant from the same line. The resemblance of the two teeth is very great in every respect, though the left one, having a long insertion at each end, is immovable.

In the second case, the lower jaw was wanting, but the teeth were said by the owner to "curve back by the sides of the head, like the tusks of an elephant." The left upper incisor was broken off near the jaw. That of the right side curves to the left in a circular spiral of $\frac{3}{4}$ inch diameter, backwards and upwards, and penetrates the roof of the mouth, on the inside of the first left molar tooth, into the left nasal passage; then passes forward, downward and outward, crossing under and just behind the left incisor, into the mouth again. The same spiral is continued, though in a smaller curve, and reaches almost to the first left molar again, making in the whole extent almost two complete circles. The tooth tapers regularly from the base upwards, and

terminates in a sharp point, and the upper part is so worn on the inside as to be triangular. When the animal to which this cranium belonged was taken, he was very much emaciated, and moved with much difficulty.

In neither of these cases was there any appearance of disease except that caused by the distortion itself.

The President remarked that instances of distortion of the incisors among the rodent animals is by no means uncommon. Many of these, affecting different species, may be found recorded in the books. The incisors of the two jaws are placed in opposition to each other, and by their mutual pressure, seem to restrain each other's growth. When, by accident, either of the teeth is turned aside from its natural direction, the antagonistic power is removed, the growth of the tooth proceeds without restraint, and the animal is soon unable to bring their points into opposition. As these teeth are its main instruments of procuring food, it becomes unable to procure a full supply, and sooner or later dies of hunger, often it may be supposed in the midst of plenty.

Dr. Gould gave descriptions of the following new species of Rimula, Crepidula, Calyptræa, Hipponix, and Pileopsis, from the collection of the United States Exploring Expedition.

Rimula cucullata. Testa solida, cinerea, per-inequilateralis, costis ad 40 acutis, compressis, majoribus et minoribus alternantibus radiata, et striis concentricis confertis muricata; apice elevato, acuto, adunco, prorsum spectante: fissura lanceolata: apertura ovata; margine sulcis inequalibus alternantibus crenulato: facies interna porcellana; fornice tenui, simplici, arcuato. Long. $\frac{5}{8}$, lat. $\frac{7}{16}$, alt. $\frac{3}{8}$ poll. *Hab.* Puget Sound.

A large and curious species, its very inequilateral form giving it the aspect of a Hipponix. It is less elevated in proportion to its base than any other known species. The ribs are very regular, and sometimes still finer rays are found in the interstices.

Rimula galeata. Testa solida, cinerea, elevata, globoso-conica, apice centrali, acuto, prorsum porrecto, striis filiformibus confertis radiata, et striis minoribus concentricis decussata: fissura brevis, fusiformis: apertura rotundato-ovalis; margine expanso,

acuto, minutissimè crenulato; fornice costâ transversali anticè suffulto, fossam trigonalem utroque latere formante. Long. $\frac{9}{20}$, lat. $\frac{8}{20}$, alt. $\frac{8}{20}$ poll. *Hab.* Puget Sound.

Differs from the preceding in shape, sculpture, and in the interior rib, which props the fornix, and forms two pits, which, with the fissure, remind one of the openings for the eyes and nose in the human skull.

Two small species of Rimula were found at Orange Harbor, one of which is probably R. *conica*, D'Orb., and the other I name R. COGNATA, which is similar to the preceding and to R. *Noachina*, but more depressed. These were found living, and will be again noticed when describing the animal.

CREPIDULA ROSTRIFORMIS. Testa solida, lævis, castanea, elevata, recurva, ad basim rotundato-ovalis; apice postico, adunco: lamina interna parva, alba, profundè sita, versus apicem penetrans; margine arcuatim sinuato. Long. $\frac{3}{4}$, lat. $\frac{1}{2}$, alt. $\frac{3}{8}$ poll. *Hab.* Straits of De Fuca.

I am acquainted with no other species where the apex is so elevated and so remote from the margin of the shell. It looks like a very obtuse-angled bird's-beak. The specimen examined had numerous rib-like folds on the surface, which were probably caused by its adhesion to some ribbed shell.

CREPIDULA LINGULATA. Testa parva, depressa, obliqua, rotundata, alba, lineis numerosis crebrè divaricantibus radiata, epidermide pallido induta; apice acuto, libero, propè marginem sito: intus lutescens; septo linguiformi, excavato, ad medium carinâ diviso et obliquè protruso, ad latus sinistrum profundè sinuato. Diam. $\frac{1}{2}$, alt. $\frac{3}{8}$ poll. *Hab.* Puget Sound.

Like C. *capensis*, Quoy. The only specimen examined seems to have been convex and solid in its early growth, afterwards becoming flat.

CREPIDULA NUMMARIA. Testa tenuis, plana, circularis, alba, striis incrementalibus laxis insculpta, epidermide flavo-corneâ induta; apice vix conspicuo, marginali: septum internum latius quàm longum, deorsum fornicatum; margine flexuoso: cavitas ferè nulla. Diam. $\frac{3}{4}$ poll. *Hab.* Classet.

This very peculiar shell is well characterized by its perfectly flat, circular form. It probably grew within some other shell, and other specimens may be found moulded into a different form. It is separated from C. *lingulata* by the form of its septum.

Calyptræa fastigiata. Testa parva, tenuis, lævis, rotundata, elevato-conica, concentricè et tenuissimè striata, epidermide fusescente induta; spirâ anfract. 3 planulatis, apice submediano, acuto: lamella interna spiralis, striata margine libero ad centrum duplicato, haud appresso, umbilicum parvum efformante. Diam. $\frac{1}{2}$, alt. $\frac{5}{8}$ poll. *Hab.* Puget Sound.

In shape, size and interior, it scarcely differs from C. *pileolus*, D'Orb., but that shell is white, has a rough surface, and is radiately ribbed about the summit. It also resembles C. *squama*, Brod.

Calyptræa radiosa. Testa irregularis, tenuis, alba, lucida, ad basim rotundata, obliquè globoso-conica, lineis acutis numerosis elevatis cum striis tenuissimis intercalariis radiata; apice postico, obtuso: lamella interna elongata, semi-volutata, perobliquè truncata; cornubus lanceolatis; basi attenuato. Diam. $\frac{1}{2}$, alt. $\frac{4}{10}$ poll. *Hab.* Mangsi Islands.

Differs from C. *equestris*, *lithedaphus*, and other similar species, in having rather distant, regularly-disposed raised lines, with intervening smaller ones, instead of their being all of uniform size.

Calyptræa chlorina. Testa irregularis, tenuis, concentricè undosa, lineis elevatis acutis confertis radiata, ad basim subcircularis, obliquè pyramidata, epidermide tenui chlorico induta; apice elevata, posteriori, spirali, cernuo: intus nitida, porcellana; margine evoluto, acuto; laminâ interiori semi-cyathiformi, brevi, reflexo, obliquè truncato. Long. $\frac{1}{2}$, lat. $\frac{6}{10}$, alt. $\frac{1}{4}$ poll. *Hab.* Port Praya, Cape de Verds.

Allied to C. *equestris*. Its depressed, orbicular and comparatively regular form, its short cup, and its color, are its characteristics.

Hipponix imbricata. Testa solida, obliquè elevato-conica, rubescens, costulis acutis radiantibus 40–50, et lamellis concentricis concinnè imbricato-clathrata; apice submediano: apertura rotundato-ovata: intus coccinea. Long. $\frac{13}{32}$, lat. $\frac{11}{32}$, alt. $\frac{8}{32}$ poll. *Hab.* Sandwich Islands.

Most like H. *pilosa* in sculpture, though the pattern is much coarser. The apex is far more central and elevated. The color of the interior is like H. *foliacea*, but more intense.

Pileopsis crystallina. Testa parva, candida, crystallina,

nitidissima, semiglobosa, ad basim ovata, sulcis profundis creberrimis radiantibus acutis insculpta; apice terminali, acuto, vix curvato, submarginali: subtus ad marginem anticè acuminata, posticè septiformis. Long. $\frac{1}{2}$, lat. $\frac{3}{8}$, alt. $\frac{1}{4}$ poll. *Hab.* Feejee Islands.

The beautiful crystalline, quartz-like lustre of this shell, its deep, regular sulci, and its crepiduloid base very distinctly mark this species.

A communication from C. G. Forshey, Esq., concerning the appearance of the Locust, *Cicada septemdecim*, in Louisiana, in 1835, was read.

Mr. Forshey gives in the main an account of the animal, very similar to that given by others. He states, however, that the number of ova deposited in one nidus is uniformly sixteen. The insect appeared to prefer the oak, small twigs of which being selected, the ovipositor was thrust into the medulla and killed it; the eggs were then deposited, two by two, symmetrically, in the ligneous fibres, on each side of the medulla. Three nidi are usually found in the same twig. The branches thus pierced, all die and drop off, and the larvæ pass from the eggs into the ground.

The singing apparatus of the male is described as situated on each side of the base of the abdomen, where two cartilages or lids cover two cells or cavities, bounded internally by delicate elastic tympana or timbals of triangular form, which are caused to vibrate by a sudden muscular contraction and expansion. The sound is one of sadness, as heard in the deep woods, according well with the superstition that the W marked on their wings is a harbinger of war. Some persons have been so fanciful as to find W on one wing, and by inversion M on the other, which is supposed to indicate war with Mexico.

The Mississippi appeared to be a boundary to their progress in that neighborhood, as none had been noticed west of the river. Neither had they appeared anywhere in the alluvial lands, which fact, the writer suggested, was probably owing to their inability to survive the long continued inundations to which these lands are occasionally subjected.

Mr. Forshey forwarded with the preceding communication, a drawing of *a cranium* of an unknown animal, from the cabinet of W. P. Mellen, Esq., of Natchez, Miss., said to have been found in "the great mound near Lelsentoun, nine miles east of Natchez.

Mr. Forshey suggested that this cranium is that of the polar bear, and Prof. Wyman remarked, that it certainly bore a considerable resemblance to it, but as the drawing presented only a lateral view, it was desirable to have a vertical drawing exhibiting the sutures, and also a view of the base, before a satisfactory opinion could be adopted. The identity of this cranium with that of the polar bear might have some bearing upon the northern origin of the races by which the tumulus was raised.

Prof. Jeffries Wyman exhibited two species of entozoa, from the muscles of a rattlesnake. He had not been able to ascertain whether they had been before observed, but proposed to make further investigations in relation to them. They were contained in a small cyst, and coiled up in an oblong spiral form; in their general appearance resembling the genus *Ascaris*.

DONATIONS TO THE CABINET.

Several jaws of reptiles, fishes and mollusks. From *Lieut. Charles Henry Davis, U. S. Navy*, of the coast survey.

Cranium of the Manatee of Cuba, (Manatus.) From *Mr. Bartlett*, of Sagua la Grande, Cuba.

ADDITIONS TO THE LIBRARY.

Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. III., Nos. 1, 2, and 3. January to June, 1846. From the *Society*.

Report of the Joint Committee of the Library of the Congress of the United States, on the expediency of publishing additional copies of the Scientific works of the Exploring Expedition. Washington, June, 1846. From the *Hon. R. C. Winthrop*.

August 5, 1846.

D. H. Storer, M. D., Vice President, in the Chair.

Dr. John Bacon, Jr. read notices of *Polythalamia*, in the sand of Sahara Desert.

Under the microscope the sand is seen to consist mainly of irregular quartzose grains, of a reddish yellow color, and a pretty uniform size, ranging between 0.01 and 0.03 of an inch. These grains are more or less rounded on the angles and edges. A few minute quartz crystals are also met with, presenting the usual six-sided prism, with pyramidal terminations, rounded in the same manner. It is easily understood how the wind raises in clouds and conveys to great distances, sand so fine as this.

Among the translucent particles of quartz, a considerable number of rounded, white, opake grains are perceived by the unassisted eye — submitted to chemical tests these proved to be calcareous, and under the microscope were seen to be *polythalamia.* They were generally broken, worn and rounded. Six or seven species only could be found, and of these Dr. Bacon could ascertain only two, *Textilaria globulosa*, and *Rotalia globulosa ;* another species, is probably *Textilaria aciculata.* The cells of these polythalamia are sometimes filled with calcareous matter, though most frequently empty. Dr. Bacon did not consider himself authorized to draw any inferences concerning the geological age of the sands of Sahara, from the presence of those polythalamia, as the species detected are found both in the cretaceous formations, and in every age of the tertiary, and are believed to exist in a living state in our modern seas.

Dr. Bacon had also examined sand from the desert of Arabia, described by Dr. Hitchcock, in a memoir on the Geology of Western Asia, in the Transactions of American Geologists and Naturalists. Its general appearance is similar to that of the specimens from the Sahara desert, except that the eye can detect no calcareous particles in it, the quartzose grains are, however, larger, average .06 of an inch. The specimen examined was entirely free from Polythalamia.

Dr. Gould described the following new species of Helix, from the Shells of the Exploring Expedition.

Helix labiosa. Testa depresso-conica, subtus convexa, arctè umbilicata, luteo-cornea, pilis sericeis quincuncialiter dispositis undique villosa: spira anfr. 6 convexis, ultimo immodicè crescente et pone labrum valdè contracto: apertura angusta, lunata; labro albo, latè revoluto; fauce lividâ. Lat. $\frac{7}{10}$, alt. $\frac{4}{10}$ poll. *Hab.* Astoria, Oregon.

Closely allied to H. *palliata*, but is smaller, lacks the tooth on the columella, which, with the greater convexity beneath, and the rapid enlargement of the last whorl near the aperture, are sufficiently distinctive characters. It seems to be nearly like H. *Columbiana*, Lea, a shell with which I am not acquainted.

Helix loricata. Testa parva, depressa, flavo-viridis, arctè umbilicata, squamulis crescentiformibus undique loricata, subtus convexa: spira anfr. $5\frac{1}{2}$ convexiusculis, arctè volutis, ultimo supernè ad peripheriam subangulato: apertura contracta, lunata, trilobata, dente laterali, dente basali, et dente columellari lamelliformi ringens; peristomate albo, reflexo, callo copioso conjuncto. Lat. $\frac{1}{4}$, alt. $\frac{3}{10}$ poll. *Hab.* California.

Form much like H. *inflecta*, but smaller, and teeth less developed. Its peculiar surface, resembling a scaly coat of mail, is highly characteristic.

Helix devia. Testa orbiculato-depressa, obliquè striata, dilutè viridi-cornea, umbilico modico canaliculato perforata: spira anfr. 6 convexis, ultimo ad peripheriam rotundato: apertura transversa, obliquè lunata, ad anfractum penultimum unidentata, dente trigono; labro albo, latè reflexo, ad basim horizontali, umbilicum aliquanto ambiente. Lat. $\frac{4}{5}$, alt. $\frac{9}{20}$ poll. *Hab.* Oregon.

Much like H. *pedestris*, but more solid, and lacks the peculiar wrinkling of the epidermis. The lip is more broadly reflected, and the aperture toothed. Placed by the side of the southern variety of H. *palliata*, somewhat blanched, it would hardly be distinguished except by the umbilicus.

Helix gulosa. Testa globulosa, crassa, rudis, sub-perforata, obsoletè carinata, pallidè castanea, colore saturatiori nubilata, et interdum fasciata: spira anfr. 6 rotundatis, striatis;

ultimo amplissimo, et obsoletè costato-carinato; suturâ profundâ: apertura magna, rotundata, fauce lividâ; labro modicè reflexo, albido, propè columellam latiore, umbilicum rimatum tegente. Lat. $1\frac{1}{10}$, alt. $\frac{4}{5}$, apert. $\frac{3}{5}$ poll. *Hab.* New South Wales.

Remarkable for the great altitude of its outer whorl and its large aperture. It is like H. *Californianus* in form, H. *albolabris* in texture, and H. *badia* in color.

Helix ziczac. T. parva, rotundata, depressa, stramineo-albida, lineolis obliquis fulminantibus fuscis picta, et laminis acutis confertis reflexis pilosis lyrata: subtus convexa, umbilico magno scalariformi perforata: spira anfr. 6 convexis, angustis: apertura subcircularis, ad basim subangulata; labro simplici, propè umbilicum reflexo. Lat. $\frac{3}{10}$, alt. $\frac{1}{6}$ poll. *Hab.* New Zealand.

A very beautiful shell, unlike any other described except H. *dissimilis*, D'Orb., which is larger, more dotted, and is not noted as hairy. In general form, striation, umbilicus, &c., it is like H. *striata*.

Helix pedestris. Testa rudis, depresso-globosa, latè perforata, luteo-cornea, ad apicem virens, striis incrementalibus conspicuis inequalibus, et striis minutissimis confertis volventibus decussata: spira anfr. $5\frac{1}{2}$ convexiusculis; ultimo ventricoso, prope aperturam deflexo: apertura obliqua, transversa, rotundato-lunaris; peristomate reflexo, albo, ad basim dilatato, juxta columellam sinuato. Lat. $\frac{7}{8}$, alt. $\frac{1}{2}$ poll. *Hab.* New South Wales.

It has the shape and aspect of H. *zaleta*, but is more like H. *profunda* inferiorly.

Instead of the usual sliding motion of the Helices, the mollusk of this shell flexes its foot into about four vertical undulations, so as to touch the plane of motion at as many points only; and these undulations pass from the head towards the tail, as in the motions of a caterpillar or a millipede.

Helix strigosa. Testa orbicularis, depressa, scabrata, latè umbilicata, cinereo-grisea vel fuscescente, fasciis linearibus volventibus pallidè fuscis interdum subtus notata: spira anfr. 5 convexiusculis; ultimo angulato et prope aperturam deflexo: apertura circularis; labro simplici, continuo. Lat. $\frac{9}{10}$, alt. $\frac{2}{5}$ poll. *Hab.* Interior of Oregon.

Of the shells of this continent, it may be compared with H.

alternata in form ; but in its opaque and rugged aspect, and in most of its characters, it nearly resembles H. *alpina* of Europe.

Helix sportella. Testa planulata, fragilis, nitida, luteo-cornea, subtus concava, latè umbilicata, lineis incrementi conspicuis et lineis volventibus subtilissimis confertim decussata : anfr. 5, ultimo magno ; suturâ profundâ : apertura rotundata, infra subangulata ; labro acuto, simplici. Lat. $\frac{1}{2}$, alt. $\frac{11}{40}$ poll. *Hab.* Puget Sound, Oregon.

Much like H. *concava*, but has a smaller umbilicus, and larger aperture, and the transverse incisions of the striæ are sufficiently distinctive.

Helix mutata. T. orbicularis, depressa, tenuis, cerina, infrà rotundata : spira anfr. 4 convexis, nitidis, junioribus glabratis, majoribus suprà crassi-striatis, subangulatis ; sutura impressa : subtus glabra, sulcis radiantibus remotis radiatim divisa, umbilico modico perforata ; apertura ampla, lunata, basi subangulata ; labro simplici. Lat. $\frac{3}{10}$, alt. $\frac{3}{20}$. *Hab.* Rio Janeiro.

Not unlike H. *alliaria*, or small specimens of H. *cellaria*, in general aspect ; but it is more globose and coarsely rib-striate, like H. *Pennsylvanica*. It may be H. *insignis*, D'Orb.

Helix lyrata (Couthouy MS.). Testa minuta, depressa, rufo-cornea, umbilicata : spira anfr. 4 cylindricis, et striis elevatis confertis lyratis ; suturâ canaliculatâ : apertura circularis ; labro simplici. Lat. $\frac{1}{5}$, alt. $\frac{1}{20}$ poll. *Hab.* Terra del Fuego.

About the size and color of H. *rupestris*, but more depressed, and with a less expanded umbilicus. It may be H. *costellata*, D'Orb.

A paper was communicated by Prof. James Hall, on the geological relations of the fossil cranium mentioned on a preceding page, and called *Castoroides Ohioensis*.

The cranium was received from Rev. Benjamin Hall, D. D., President of Geneva College, and was discovered in a swamp on the farm of Gen. W. H. Adams, of Clyde. The situation in which it was found is an elevated plateau or level tract of land, a portion only of which would be denominated a swamp, though the whole surface is covered with a peaty soil which supports a

heavy growth of elm, hemlock and ash, with some maple and beech. This elevated ground is the summit level, from which the waters flow in opposite directions, into Lake Ontario on the north, and into the Clyde river, and thence into the Cayuga and Seneca lake outlets on the south. The country probably then formed an estuary through which water flowed into Lake Ontario, which was then probably at an elevation of 150–200 feet higher than at present.

A section at this place, and at numerous others near the same spot, presents the following characters:

1. Muck, or vegetable soil, supporting a heavy growth of timber, two feet or more in thickness.

2. Fine sand, with occasional thin bands of clay, often consisting of alternating layers of sand, twigs, leaves and other fragments of vegetable matter, and much blackened thereby; two to three feet thick.

3. Muck, or peaty soil, composed of decayed fragments of wood, bark, leaves, &c., enclosing trunks of trees of large size, about four feet thick.

Skull of Castoroides Ohioensis.

4. Fine sand, with shells of Planorbis, Valvata, Cyclas, &c., one to two or three feet thick.

5. Ancient drift, with northern bowlders and fragments of the sandstones and limestones, which occur in place a few miles farther north — depth unknown.

The thickness of 2, 3, and 4, is variable, though the bottom of No. 3 usually varies little from the depth of eight feet from the surface. A glance at the section reveals the true period of the deposit, showing conclusively that the whole is a lacustrine formation, made subsequent to the deposition of the ancient drift, (No. 5,) which is characterized by its foreign materials, while in the later deposit not a pebble of the size of a pea can be found.

The fossil is doubtless of the same age as the remains of the mastodon. These are all found in situations showing that this period was subsequent to that when the earth has undergone any great change.

Its geographical distribution must have been extensive, as it has been found in Ohio, and lately at Natchez.

Robert W. Gibbes, M. D., of Columbia, S. C., was elected a corresponding member of the Society.

Samuel Kneeland, Jr., M. D., was elected an ordinary member.

ADDITIONS TO THE LIBRARY.

Abhandlungen der Mathem-Physikalischen Classe der Kœniglich Bayerischen Akademie der Wissenchaften. 3 vols. 4to. München, 1837–1845. From the *Royal Bavarian Academy.*

Gelehrte Anzeigen. 4 vols. 4to. München, 1843 and 1844.

Bulletin der Kœnig. Acad. der Wissenchaften, for 1845, and Nos. 1 to 5, for 1846. From the *same.*

Vergleichende Betrachtungen über die Mannigfaltigkeit in der organischen und unorganischen Natur, von Dr. Franz von Kobell. 4to pamph. München, 1836. From the *same.*

Akademischen Almanack auf das jahr 1845. 12mo pamph. München. From the *same.*

Uber Vergiftungen, nebst einigen Versuchen an Thieren, von Dr. Ignaz Rudolph Bischoff. 12mo pamph. Wien, 1844.

Zuccarini, J. G. Ueber die Vegetationsgruppen in Bayern. 4to pamph. München, 1833.

Döllinger, I. Gedächtnissrede auf Samuel Thomas von Sömmering. 4to pamph. München, 1830.

Schafhäutl, Karl. Die Geologie in ihrem Verhältnisse zu den übrigen Naturwissenchaften. 4to pamph. München, 1843.

Wagner, A. Andeutungen zur Characteristik des organischen Lebens nach seinem Auftreten in den verscheidenen Erdperioden. 4to pamph. München, 1845.

Von Martius, C. F. P. Die Kartoffel-Epidemie der letzten Jahre. 4to pamph. München, 1842.

Rede zum Andenken an Ignaz Döllinger. von Dr. Ph. Fr. von Walther. 4to pamph. München, 1844. From the *same.*

Uber das Magnetische Observatorium der Kœnigl. Sternwarte bei München. Von Dr. J. Lamont. 4to pamph. München, 1841.

Systema Materiæ Medicæ Vegetabilis Brasiliensis. Composuit C. F. P. De Martius. 8vo pamph. Lipsiæ, 1843.

Reise in Brasilien auf Befehl Sr. Majestät Maximilian Joseph I. Von Dr. J. B. von Spix und Dr. C. F. P. Von Martius. 3 vols. 4to. München, 1823–31. From *Dr. Von Martius.*

History of British Fossil Mammals and Birds. By Richard Owen. 8vo. London, 1844. *Audubon Fund.*

August 19, 1846.

C. T. Jackson, Vice President, in the Chair.

Dr. D. H. Storer observed that a recent visit to Martha's Vineyard had enabled him to collect numerous ichthyological facts of considerable interest.

In his Report on the Fishes of Massachusetts, he had stated, upon the authority of Dr. Yale, that a *sting-ray* was common at Holmes Hole. He had now had the opportunity of seeing both a male and a female specimen, and ascertained it to be *Trygon hastata.*

Previous to his visit to Martha's Vineyard, he had not known that *Torpedo occidentalis* occurred on the coast of Massachusetts, except on the inner or bay side of Cape Cod, from Provincetown to Wellfleet, but while at Chilmark he had learned that it was taken every year at that place, as many as fifteen or twenty individuals being captured in the spring months, in seines and by hook and line.

Dr. C. T. Jackson read the results of a chemical analysis of Sand from the desert of Sahara, taken from specimens in the Society's cabinet, viz.:

Organic matter and water, ...	2.30
Insoluble silicious matter, . . .	91.30
Perox. Iron and alumina, ...	2.68
Carbonate of Lime, ...	3.70
	99.98

The Insoluble silicious matter attacked by fusion with Carbonate of soda, and analyzed, yielded

Silex, ...	84.7
Alumina and Perox. Iron, . . .	3.0

Dr. Gould continued his descriptions of new Shells, collected by the United States Exploring Expedition, and belonging to the genus Helix.

Helix pusillus. Testa minuta, tenuis, depressa; suprà obliquè striata, albido-virens; infra viridior, sub-polita, perforata: spira anfr. 4 sub-planulatis; suturâ profundâ: apertura circularis; labro simplici. Long. $\frac{7}{40}$, lat. $\frac{3}{40}$ poll. *Hab.* Mountains of Maui, Sandwich Islands.

Scarcely to be distinguished from H. *electrina*, Gould, in size and form, but it is more coarsely striated. It is also like H. *spirillus*, but has a much smaller umbilicus.

Helix saxatilis (Couthouy MS.). Testa parva, sub-globosa, lucida, viridis, infrà convexa, umbilico modico perforata, leviter striata: spira anfr. vix 4 cylindricis, citò crescentibus; suturâ canaliculatâ: apertura sub-orbicularis, ampla; labro simplici, ferè continuo. Alt. $\frac{1}{10}$, lat. $\frac{1}{4}$ poll. *Hab.* Terra del Fuego.

Resembles, in general, H. *lucida*, and is remarkable for its globular form and fresh green color.

Helix exæquata. T. parva, discoidea, tenuis, lucida, glabrata, succineo-cornea, ad peripheriam rotundata, infra sub-plana, in foveam centralem devexa: spira anfr. 7 arctè volutis, suprà planulatis, suturâ marginatâ benè impressâ discretis, spiram planam efformantibus: apertura angusta, transversa; labro simplici, portione sinistrâ ferè horizontali, recedente, subreflexâ. Lat. $\frac{7}{20}$, alt. $\frac{3}{20}$. *Hab.* Kauai, Sandwich Islands.

A very beautiful and polished symmetrical shell; beneath like H. *interna* and *indentata*.

Helix cicercula. T. depresso-globosa, tenuis, sub-opaca, imperforata, albido-virescens, striis incrementi conspicuis et striis volventibus sparsis insculpta: infrâ rotundata, foveâ centrali modicâ: spira anfr. 5 convexis, ultimo angulato: apertura lunata; labro simplici; columellâ supernè vix reflexâ. Lat. $\frac{1}{4}$, alt. $\frac{3}{20}$ poll. *Hab.* Mountains of Hawaii.

Distinguished from the other small subglobular shells here mentioned by its pea-green color and more globular shape, both above and beneath, its deeper umbilical pit, and by having no semblance of contortion of the columella.

Helix cryptoportica. Testa parva, orbiculari-depressa, ad apicem acuta, tenuis, pellucida, nitida, luteo-virescens, leviter striata: infrà rotundata, imperforata, foveâ parvâ centrali: spira anfr. $5\frac{1}{2}$ convexiusculis, ultimo carinato; suturâ impressâ, mar-

ginatâ : apertura lunata, labro simplici ; columellâ supernè valdè intortâ, sinum angustum centralem formante.

Very similar to H. *subrutila*, Mighels, but is distinguished from it by the want of revolving striæ, and by the manner in which the columella joins the whorl above.

Helix cultrata. T. parva, orbicularis, depressa, glaberrima, lucida, fusco-viridis, infrâ rotundata, in foveam umbilicalem devexa, imperforata : spira anfr. 5 convexis, ultimo supernè carinato ; apice obtuso ; suturâ marginatâ : apertura angusta, lunata, labro simplici ; columellâ obliquâ, callosâ, albâ, planulatâ, inflexâ, infernè dentem simulante. Lat. $\frac{9}{40}$, alt. $\frac{1}{10}$ poll. *Hab.* Taheiti and Eimeo.

A beautiful, smooth, lenticular, dark-green shell, not unlike H. *interna*, Say, distinguished by its curious broad, white, inflected, columellar lip.

Helix pertenuis. Testa minuta, subglobosa, pellucida, nitidissima, viridi-aurèa, imperforata : spira depressa, anfr. $4\frac{1}{2}$ convexis, ultimo amplo, ad peripheriam angulato, infrà sulcis remotis radiato : apertura ampla, lunata ; labro simplici. Lat. $\frac{1}{8}$, alt. $\frac{1}{10}$ poll. *Hab.* Aurora Island.

A small Matea, or very pellucid shell, somewhat like H. *electrina* and *lucida*, but more globular..

Helix gradata. Testa parva, planorboidea, tenuis, nitida, rufo-viridis, luteo radiatim variegata, supra depressa, infra acetabuliformis : spira anfr. 5 convexis, intra umbilicum angulatis, obliquè et confertim striatis et cum striis interruptis volventibus decussatis ; ultimo subangulato, versus aperturam deflexo ; suturâ canaliculatâ : apertura obliqua, subcircularis ; labro acuto, ad umbilicum reflexo. Lat. $\frac{1}{5}$, alt. $\frac{1}{2}$ poll. *Hab.* Tongataboo.

Shape and size of H. *striatella*, Anthony, but has the umbilicus broader, deeper, and more shelving.

Helix fornicata. Testa parva, planorboidea, tenuis, dilutè rufa, supra convexiuscula, infra concava, obliquè ordinatim et confertim costato-striata : spira anfr. 4 convexis ; ultimo ad peripheriam rotundato ; suturâ profundâ : apertura transversa, rotundato-elliptica. Lat. $\frac{1}{4}$, alt. $\frac{1}{10}$ poll. *Hab.* Kauai, Sandwich Islands.

A small, dome-shaped shell, marked like H. *striatella*, but more like H. *indentata*, in the form of the spire.

HELIX RUBIGINOSA. T. orbicularis, depressa, ferrugineo-cornea, fusco tessellata, obliquè costato-striata, latè umbilicata; spira anfr. 6 arctè volutis; suturâ impressâ: apertura subrecta, lunata; labro simplici; lamellâ unicâ secundum anfractum penultimum volvente. Lat. $\frac{7}{30}$, alt. $\frac{3}{40}$ poll. *Hab.* Kauai, Sandwich Islands.

Larger than the other checkered shells of this group; like H. *striatella*, Anthony, in form, size and sculpture, or like H. *radiata*, Mull., as to coloring.

HELIX DÆDALEA. Testa parva, discoidea, rubro-castanea, fusco tessellata, costellis radiantibus acutis confertis scabra, subtus acetabuliformis: spira anfr. ad 6 arctè volutis, duplo altioribus quàm latis, ad peripheriam rotundatis, infrà haud planulatis: sutura impressa: apertura angusta, verticalis, lunata; fauce lamellis 9 volventibus instructa, quorum 4 ad anfractum penultimum, uno ad columellam, 2 ad basim, 3 ad labium dispositis. Alt. $\frac{1}{20}$, lat. $\frac{1}{10}$ poll. *Hab.* Matea Islands.

Size and color of H. *contorta*, Fer.; but the whorls are more numerous and compact, and there are twice as many lamellæ on the penult whorl. The umbilicus is similar in form to that of the young H. *bursatella*, only the whorls remain rounded instead of being flattened.

ADDITIONS TO THE LIBRARY.

Gray, G. R. Genera of Birds. 4to, No. 28. By *purchase.*

Audubon and Bachman. Quadrupeds of North America. Folio, plates, 86 to 90. From *Subscribers.*

Geological Report on the Mineral Lands of the United States. 8vo. Printed by order of Congress. From *Hon. R. C. Winthrop.*

Proceedings of the Academy of Natural Sciences of Philadelphia. No. 2 and 3, Vol. III. From the *Society.*

American Quarterly Journal of Agriculture and Science, edited by Prof. Emmons. No. 11. From the *Editors.*

Remarks on fossil footmarks and icemarks, in the sandstone of Middletown, Conn. By Joseph Barratt, M. D. (Newspaper sheet.) From the *Author.*

Annales des Sciences Physiques et Naturelles d'Agriculture et d'Industrie, publiées par la Société Royale d'Agriculture, d'Histoire Naturelle, et Arts Utiles de Lyons. 8 vols. royal 8vo. 1838 to 1845.

September 2, 1846.

T. Bulfinch, Esq. in the Chair.

In consequence of the absence of several members attending the meeting of the Association of American Geologists and Naturalists in New York, no business was transacted.

September 16, 1846.

Mr. Thomas T. Bouvè in the Chair.

A communication was read from Dr. William Wood, of Portland, Me., containing a description of a species of Shark supposed by him to be hitherto undescribed.

The specimen was taken about eighty miles east of Portland, to which place it was brought. It was skinned and stuffed without any accurate drawing or measurements having been taken, and was not seen by Dr. W. until several days after its preparation. Dr. Wood having found it difficult to place the species under any recognized genus, proposes to establish a new genus for its reception. It approaches nearest the genus *Scymnus*, of Cuvier, but differs widely from it in the characters of the teeth, and in the absence of the temporal orifice. The principal distinctions are that the teeth in the present genus are quadrilateral in the upper, and not crooked in either jaw, are lancet-shaped in the lower, and not divergent from the centre, and differ from every species in being smooth in both jaws. Dr. Wood proposes for the new genus the name of *Leiodon*.[1]

Leiodon echinatum. Head prominent, muzzle blunt, body subtriangular to posterior line of first dorsal. Skin densely covered with conical, curved, long points or spines. A lateral line of oblique dark spots, running the whole length of the body. Color of pecies, *lilac*. Length, 16 feet.

[1] ΛΕΙΟΣ ΟΔΟΥΣ.

Dr. Gould continued his descriptions of the species Helix, from the Shells of the United States Exploring Expedition.

Helix obolus. T. parva, discoidea, deorsum compressa, suprà planulata, infrà concava, radiatim minutissimè et inequaliter striata, fusco-ferruginea, piceo tessellata: spira anfr. $5\frac{1}{2}$ suprà excavatis, ultimo supernè costato-carinato: apertura sub-rhomboidea; fauce lamellâ unicâ secundum anfractum penultimum volvente. Lat. $\frac{1}{5}$, alt. $\frac{1}{30}$ poll. *Hab.* Taheiti.

A most singular discoidal shell, resembling *Planorbis vortex*.

Helix bursatella. Testa parva, per-variabilis, rotundata, conica vel planulata, suprà maculis fuscis et albidis alternantibus flexuosis, tessellata, infrà cinereo-albida vel flammulis fuscis flexuosis radiata, costis numerosissimis acutis radiantibus lyrata: subtus convexiuscula, interdum simplex, interdum concentricè striata, nunc radiatim costellata, nunc albida, nunc fusco flammulata: spira anfr. ad 8 externè excavatis, ultimo carinato; suturâ impressâ, plerumque marginatâ: apertura parva, transversa; fauce cum lamellis 7 volventibus, quorum 2 superiores, 1 columellaris, 4 remotis (1 suprà, 3 infra carinam) ad labium; labro simplici; umbilico cavernoso, in junioribus acetabuliformi, in majoribus ad januam parvo, constricto, margine acuto, una cum labio continuo. *Hab.* Taheiti and Eimeo.

The above characters are found combined in every possible manner. The variations in size, color, solidity, and umbilicus, may all be reasonably ascribed to differences in age, food, and perhaps to the elevation, between 2000 and 5000 feet, at which they were collected. The armature of the mouth and the peculiar umbilicus, at first broad, and at maturity contracted, or pursed up, so that the flattened edges of the whorls form a large spherical cavity, are the characteristic marks. Two principal varieties may be noticed.

α. Large, elevated, conical specimens, which are without mottling, rib-like striæ, or revolving lines beneath. Lat. $\frac{3}{10}$, alt. $\frac{2}{10}$ poll.

β. Smaller, depressed specimens, more or less coarsely ribbed, striated and mottled, both above and beneath. Lat. $\frac{1}{5}$, alt. $\frac{1}{10}$ poll.

Helix tumulus. Testa parva, solida, flavida, orbiculato-pyramidata, basi sub-planulata, umbilico modico perforata: spira

elevata, conico-rotundata ; anfr. 6–7 convexiusculis, striis perobliquis exaratis, ultimo obtusè ad peripheriam angulato, prope aperturam compresso : apertura parva, transversa, lunata ; peristomate simplici. Long. $\frac{2}{5}$, alt. $\frac{7}{20}$ poll. *Hab.* Feejee Islands.

This bears a general resemblance to H. *pyramidata* ; but with the same diameter, it is less elevated, and more rounded at apex.

Helix tentoriolum. Testa parva, elevata, trochiformis, ad apicem rotundata, pallidè virescens, obliquè et concinnè striata, basi in umbilicum mediocrem devexâ : spira anfr. 6 planulatis, et carinâ acutissimâ, albâ, cinctis : apertura subtriangularis, basi rotundatâ ; labro simplici, ante umbilicum reflexo. Lat. $\frac{2}{5}$, alt. $\frac{3}{10}$ poll. *Hab.* Upolu.

Its elevated form and rounded summit, resembling a nipple, is very remarkable.

Helix (caracolla) troilus. Testa variabilis, depresso-conica, sub-discoidea, leviter et obtusè striata, flavescens, subtus convexa, in umbilicum amplum incurvata, carinata ; carinâ utroque lineâ spirali castaneâ marginatâ : interdum coloribus inversis : spira anfr. $5\frac{1}{2}$ rotundatis : apertura semilunaris, supernè angulata ; labro acuto. Lat. $\frac{3}{4}$, alt. $\frac{3}{10}$ poll. *Hab.* Samoa Islands.

Is somewhat like H. *explanata*, Quoy, but much smaller and more umbilicated, and differently colored. Not unlike H. *alpina* in form. Some specimens are much elevated ; others have the chestnut color with a yellow line ; and one has the two bands coalescing and covering the whole periphery.

Helix cressida. Testa variabilis, solida, depressa, lenticularis, acutè carinata, nitida, densè et acutè striata, coloribus flavo-viridibus et castaneis coalescentibus fasciata, infrà sub-planulata, umbilico magno et profundo perforata : spira anfr. 5 vix convexis : apertura triangularis ; labro acuto ; fauce lilacinâ. Lat. $\frac{7}{10}$, alt. $\frac{1}{4}$ poll. *Hab.* Samoa and Taheiti.

In some respects similar to H. *Troilus*, but more lenticular, flatter beneath, the colors are differently disposed, and the surface sculptured with more numerous and much sharper lines. The animal is also different in coloring. Shape very much like H. *acies*, Fer. but flatter beneath and smaller.

October 21, 1846.

Dr. J. B. S. Jackson in the Chair.

The Chairman read a letter from the Secretary of the Massachusetts Historical Society, communicating a vote, that a collection of Plants belonging to that Society be presented to the Boston Society of Natural History, on certain conditions. It was voted, that the Curator of Botany be requested to confer with the officers of the Massachusetts Historical Society, to receive the plants, and give the requisite receipts.

Dr. Gould communicated the following descriptions of the Shells of the Exploring Expedition.

Helix eurydice. Testa tenuis, depresso-pyramidata, acutissimè carinata, pallidè virens, lineâ castaneâ volvente suprà et infrà picta, subtus planulata, umbilico lato et profundo perforata: spira anfr. 5–6 vix convexis, apice rotundato: apertura transversa, acutè triangularis; labro acuto. Lat. $\frac{13}{20}$, alt. $\frac{11}{20}$ poll. *Hab.* Tongataboo.

Approaches H. *Cressida*, but is much thinner, nearly transparent, of a much smoother texture at surface, flatter beneath, and the coloring seems to be very uniform. The color of the animal is also different. Its shape is almost precisely that of H. *elegans*, though much larger. It is also like H. *planorboides*, Lesson, (H. *solarium*, Quoy), which is very much smaller and destitute of fillets.

Helix subtilissima. T. minuta, fragilissima, nitidissima, lenticularis, plano-convexa, imperforata: spira planulata, anfr. 5 planis, arctè volutis; ultimo acutissimè carinato: apertura —— (fracta). Lat. $\frac{1}{8}$, alt. $\frac{1}{16}$ poll. *Hab.* Maui, Sandwich Islands.

This little pellucid shell, though imperfect, is so well marked by its compressed lenticular form, sharp carination and numerous whorls, that I venture to pronounce it a new species.

Helix (Nanina) scorpio. Testa rotundata, depressa, rubro-castanea, fasciis radiantibus atro-purpureis tessellata, subtus haud convexa : spira depressa, anfr. $4\frac{1}{2}$ convexis. Lat. $\frac{3}{5}$, alt. $\frac{2}{5}$ poll. *Hab.* Feejee Islands.

The above characters were drawn from the figure of a shell which looks somewhat like *Cyclostoma tigrinum.* Its inhabitant is most peculiar ; having, besides the usual anal lappet of Nanina covering the mucus pore, six other smaller ones between this and the shell, arranged in a double series along the back.

Helix (Nanina) ruida. Testa fragilis, obconica, obliquè striata, epidermide tenui subconcentricè et confertissimè rugosâ induta, coloribus sordidè viridibus marmorata, subtus valdè convexa, perforata : spira anfr. $4\frac{1}{2}$ planulatis, ultimo supernè angulato : apertura lunata ; labro acuto ad umbilicum reflexo. Lat. $\frac{1}{2}$, alt. $\frac{3}{8}$ poll. *Hab.* Feejee Islands.

The specimens collected appear to be immature, but the peculiar minute wrinkling of the epidermis, somewhat like that on *Planorbis albus* and *hirsutus*, may serve to characterize it.

Helix (Nanina) irradiata. T. conico-globosa, tenuis, imperforata, albida, suprà purpureo radiatim tessellata, lineis incrementi acutis confertim striata, subtus rotundata : spira anfr. 6 convexis, ultimo sub-angulato : apertura transversa, lunata ; labro acuto, ad columellam incurvato, vix reflexo. Lat. $\frac{1}{4}$, alt. $\frac{3}{8}$ poll. *Hab.* New Holland.

A singularly-colored Helix, in shape more like H. *Cubensis* than any other which I recollect. The colors are arranged somewhat like those on *Bulimus vexillum.*

Helix (nanina) rubricata. Testa globoso-conica, solida, vix perforata, suprà nitida, rufo-castanea, striis radiantibus gregatim dispositis et striis volventibus decussata, infra glaberrima, livido-castanea, ad centrum declivis : spira anfr. 6 convexis, amplis; suturâ submarginatâ : apertura semilunaris ; fauce lividâ ; labro simplici, ad columellam reflexo, albo. Lat. 1, alt. $\frac{3}{5}$ poll. *Hab.* Lebouka, Feejee Islands.

In shape and size like H. *zaleta* and H. *irregularis ;* but in all other respects it is like H. *velutina*, Sowb., to which it is very closely allied. Perhaps it is H. *Nouleti*, Le Guillou.

HELIX LURIDA. Testa globoso-conica, depressa, glaberrima, nitida, livido-castanea, infrà pallescens, ad umbilicum minutum declivis: spira anfr. 6 convexis, radiatim et obtusè striatis, ultimo prope aperturam subangulato; suturâ impressâ, marginatâ: apertura lunata, fauce lividâ; labro acuto, ad umbilicum reflexo, albo. Lat. 1, alt. ½ poll. *Hab.* Feejee Islands.

Groups with the preceding species to which it is very similar, but differs essentially in the want of revolving striæ, its carinated periphery, and light-colored umbilical region. It probably belongs to NANINA.

HELIX CALVA. Testa tenuis, depresso-globosa, nitida, pallidè stramineo-virescens, arctè umbilicata: spira anfr. 5 haud turgidis, striis incrementi obsoletis; suturâ haud impressâ, marginatâ: apertura semilunaris; labro simplici, acuto, ad umbilicum paulum reflexo. Lat. ⅘, alt. ½ poll. *Hab.* Feejee Islands.

Similar to the preceding, but smaller and lighter-colored, and is plainly distinguished by its smooth, shining, rounded spire, similar to the summit of H. *Moricandi* or H. *lychnuchus*. This must also be a NANINA.

Dr. G. also announced the receipt of another letter from Dr. F. W. Cragin, of Surinam, accompanying various contributions to the Cabinet, and proposed a vote of thanks to Dr. C. Voted unanimously.

Dr. Cabot mentioned, that having heard that Terns were breeding on the islands of Beverly harbor, he had visited those islands, and found the birds there, in great numbers. The Arctic Tern and the Roseate Tern were observed, besides great numbers of the common species. He believed this was the most northern limit at which the Roseate Tern had been found, on this side of the Atlantic.

Dr. Cabot also mentioned, that he had observed, this season, abundance of Horse Mackerel (*Temnodon saltator*) in Beverly harbor, twenty or more at a time. He believed that this fish had not usually been seen in shoals. The appearance presented by their motion through the water, precisely resembled that of the sea-serpent, as described by observers.

A large collection of Shells, principally from the Maranec River, was presented by Dr. B. B. Brown, of St. Louis, and the thanks of the Society were voted to the donor.

November 4, 1846.

Dr. Gould was chosen Chairman.

Dr. Storer communicated the following notes:

"In September last, a specimen of *Palinurus perciformis* was found in our harbor. This is the first specimen I have known to be taken north of Cape Cod."

"A specimen of Epeira ——— was found by my son, Horatio Storer, at Cambridge, on the 27th September. Hentz mentions only North Carolina as its habitat. It agrees most perfectly with Hentz's figure."

Dr. Gould gave descriptions of the following species of Vitrina, from the collection of the Exploring Expedition.

Vitrina Ruivensis (Couthouy MS.) Testa haliotiformis, transversè subquadrata, depressa, papyracea, pellucida, nitida, chlorata, gradibus ætatis striata: spira vix conspicua, anfr. uno rapidè crescente; apice laterali: apertura faciem inferiorem adequans; labro propè spiram membranaceo; columellâ laxè intro spiram volvente et eam penitus exhibente. Lat. $\frac{2}{40}$, alt. $\frac{4}{40}$ poll. *Hab.* Madeira, near the summit of Pico de Ruivo, 6210 feet altitude. A very large and well-marked species.

Vitrina nitida. Testa depresso-globosa, heliciformis, tenuissima, pellucida, nitidissima, lævigata, succineo-viridis, imperforata: spira anfr. 4 convexis, ultimo amplo; apice subcentrali, prominente; suturâ excavatâ: apertura transversa, subcircularis; peristomate inflexo; columellâ arcuatâ, usque ad apicem perspicuâ. Diam. $\frac{1}{40}$, alt. $\frac{5}{40}$ poll. *Hab.* Madeira, Roche de Empeña, 4240 feet elevation. A most elegant and brilliant species.

Vitrina caperata. Testa helicoidea, depresso-globosa, ad peripheriam obtusè angulata, tenuis, sub-opaca, striis incrementalibus conspicuis et rugis obliquis ramulosis, præcipuè supernis, exarata, dilutè fulvo-cornea, arctè perforata: spira anfractibus $3\frac{1}{2}$ convexis, citò crescentibus; suturâ profundâ; apice subcentrali: apertura sub-circularis; labro simplici, ad umbilicum everso; columellâ, callum simulante, secundum spiram introeunte. Diam. max. $\frac{9}{20}$, alt. $\frac{1}{5}$ poll. *Hab.* Kauai, Sandwich Islands.

A large and substantial species, easily distinguished by the branching wrinkles of the surface, which perhaps answer to blood-vessels.

Vitrina marcida. Testa sigaretiformis, tenuis, sub-opaca, flavo-viridis, depresso-orbicularis, tenuiter striata, sub-perforata: spira anfr. ad 3, convexiusculis, ultimo amplo, declivo; apice sub-centrali; suturâ bene impressâ: apertura transversa, elliptica; labro plerumque membranaceo. Diam. $\frac{22}{40}$, alt. $\frac{7}{40}$ poll. *Hab.* Madeira, Roche de Empeña; height of 4200 feet.

Differs from V. *Lamarckii*, especially in having more whorls. The animal is still more decidedly different.

Vitrina tenella. Testa parva, V. *pellucidæ* simillima, succinea, sub-perforata, gradibus ætatis conspicuis striata: spira rotundata, apice subcentrali, anfr. 3, convexis, declinantibus; suturâ excavatâ: apertura sub-circularis; labro antrorsum arcuata. Diam. $\frac{1}{3}$, alt. $\frac{1}{11}$ poll. *Hab.* Kauai, Sandwich Islands.

It is larger than V. *pellucida*, more opaque, and the aperture is larger.

Vitrina robusta. Testa helicoidea, transversa, depresso-globosa, sub-valida, polita, perlucida, dilutè flavo-viridis, lineis incrementalibus regularibus, obtusis, striata: spira obtusa, anfr. 3, ultimo magno; apice subcentrali; subtus rotundata: apertura rotundata; margine sinistro supernè reflexo, rimam umbilicalem parvum formante. Diam. max. $\frac{1}{2}$, alt. $\frac{1}{4}$ poll. *Hab.* New South Wales.

This is about the size and form of V. *nigra*, Quoy, and is almost exactly like V. *Freycineti*, Fer. It is more globose and brilliant than V. *marcida*, and seems to be built more firmly than any other species.

November 18, 1846.

Dr. C. T. Jackson, Vice President, in the Chair.

Dr. Gould continued his descriptions of Shells collected by the U. S. Exploring Expedition.

Succinea rotundata. Testa parva, tenera, sub-opaca, hemispherica, flavo-virens, concinnè striata : spira ferè nulla, intus aperta, anfr. $2\frac{1}{2}$, ultimo amplissimo : apertura circularis, posticè angulata, testam ferè adequans ; margine columellari obliquo, subrecto, conspicuè plicato, et callo lato induto. Long. $\frac{4}{10}$, lat. $\frac{7}{20}$, alt. $\frac{3}{20}$ poll. *Hab.* Mountains of Oahu, Sandwich Islands.

This, with the two following species, are remarkable for their hemispherical form and large apertures, with the animal much too large for the shell, and belong to Helicolimax, Fer. Resembles S. *aperta*, Lea.

Succinea cepulla. Testa parva, tenuissima, pellucida, nitida, succineo-virens, rotundato-elliptica, depressa, sinistrorsum rotundata, dextrorsum declivis, longitudinaliter striata et liris inequalibus volventibus arata : spira ferè nulla, anfr. $2\frac{1}{2}$: apertura amplissima, ovalis, ad basim latè rotundata, ad columellam arcuata, leviter plicata ; intus metallica. Long. $\frac{1}{2}$, lat. $\frac{7}{20}$, alt. $\frac{1}{5}$ poll. *Hab.* Hawaii.

Depressed and without spire like the preceding, but is larger, more transparent, less spherical, has spiral furrows, and the aperture is peculiarly widened posteriorly by an outward sweep of the lip.

Succinea putamen. Testa magna, depressa, globoso-elliptica, tenuis, lævis, striis incrementalibus et striis volventibus tenuiter decussata, fulvo-cornea, ad peripheriam sub-angulata : spira ferè nulla, anfr. vix 2 : sutura linearis : apertura paginam inferiorem ferè adequans, rotundato-ovalis ; margine columellari sub-plicato. Long. $\frac{8}{8}$, lat. $\frac{1}{2}$ poll. *Hab.* Upolu.

A remarkable shell, resembling the half of a bird's egg. Distinguished from S. *rotundata* by its larger size, revolving striæ, and angular periphery.

Succinea vesicalis. Testa tenuissima, fragilis, lucida, late ovata, depressa, gradibus ætatis undulata, epidermide stramineâ induta : spira anfr. 3, ultimo magno, patulo, alteris spiram parvam formantibus : apertura subovalis, ad basim latè rotundata, longitudinis $\frac{4}{5}$ equans ; plicâ columellari conspicuâ. Long. $\frac{4}{10}$, lat. $\frac{3}{8}$; alt. $\frac{3}{8}$ poll. *Hab.* Mauna Kea, Hawaii.

About the shape and size of S. *rubescens*. A delicate, very ample species.

Succinea lumbalis. Testa mediocris, ovato-conica, tenuissima, sublucida, pallidè virens, leviter striata, subtus gibbosa : spira acutè conica ; anfr. 3 convexiusculis, ultimo ventricoso, versus suturam declivi : apertura rotundato-ovata ; columellâ valdè arcuatâ, callo indutâ ; plicâ mediocri. Long. $\frac{9}{20}$, lat. $\frac{5}{20}$, alt. $\frac{4}{20}$ poll. *Hab.* Kauai, Sandwich Islands.

Its dull aspect, conical spire and ventricose form are its distinctive marks. It resembles small specimens of *Limnea catascopium*, Say.

Succinea humerosa. Testa ovata, depressa, sub-rhombea, sublucida, striis incrementalibus rugosa, sulcis raris volventibus interdum arata, dilutè virens, et interdum rubricans : spira anfr. 3, ultimo permagno, posticè sub-angulato : apertura sub-ovalis, posticè amplificata ; labro dextrorsum decurrente ; plicâ columellari conspicuâ. Long. $\frac{3}{5}$, lat. $\frac{3}{8}$, alt. $\frac{1}{5}$ poll. *Hab.* Mountains of Taheiti.

About the size of S. *amphibia*, and has a peculiarly broad aperture on account of the outward sweep of the posterior portion of the lip, and may be known by the angular shoulder on the last whorl.

Succinea crocata. Testa pinguis, sub-solida, sub-opaca, ovato-globosa, saturatè crocea, lineis incrementi exilibus et interdum lineis inordinatis volventibus striata : spira brevis, acuta, anfr. vix 3, convexis, suturâ profundissimâ discretis, ultimo ventricoso : apertura magna, rotundata-ovata ; columellâ carinatâ sub-incrassatâ, haud sinuoso : intus calcarea. Long. $\frac{5}{8}$, lat. $\frac{1}{2}$ poll. *Hab.* Upolu.

May be easily known by its large size, inflated form, and its peculiar color. The spire is remarkably contorted.

Succinea canella. Testa parva, sub-solida, opaca, ovata, impolita, cinnamomea, leviter striata: spira conspicua; anfr. 3, ventricosis, suturâ valdè constrictâ discretis: apertura parva, ovato-rotunda; peristomate incrassato, postice sub-continuo; columellâ arcuatâ, haud plicatâ. Long. $\frac{1}{3}$, lat. $\frac{2}{3}$ poll. *Hab.* Maui, Sandwich Islands.

Very much like S. *avara*, Say, and S. *caduca*, Mighels; but it is less elongated, more solid, and without a columellar fold.

Mr. Bouvé exhibited a series of fossil Shells of the Genus Strophomena, from the blue limestone of Ohio, brought by Mr. Bartlett, from Cincinnati.

He stated that a Committee of the Western Academy of Natural Sciences had lately examined a large number of specimens of this genus from the Blue Limestone, and had become satisfied that far too many species had been formed from the individuals found in that deposit. Instead of nearly twenty species, they have come to the conclusion that they may all be reduced to seven.

Prof. Agassiz exhibited a Fish, which he showed to be the *Huro nigricans* of Cuvier, though it differed in several particulars, which he pointed out, from the figures and descriptions usually given of that fish, which were drawn from a defective specimen. It is the same species described by De Kay under the names of *Centrarchus fasciatus* and C. *obscurus*.

Dr. Cabot exhibited a specimen of the Shovel-fish, from Ohio river.

It was about 12 inches in length. Prof. Agassiz remarked, that, young as it was, the yolk-sac was absorbed. In this respect, the sharks and other cartilaginous fishes differ from the osseous, the former retaining the sac till a comparatively advanced period of their growth. The sturgeons resemble the osseous fishes in this respect, which confirms the correctness of Prof. Agassiz's classification of this tribe with the osseous fishes, though their skeleton is as soft as that of the cartilaginous fishes.

Dr. C. T. Jackson exhibited specimens of Botryoidal and other Copper ores, from Coale's mine, Frederick Co., Maryland. He also pointed out a green crust, which he supposed to be a new mineral, adhering to a mass of Chrome ore.

Dr. J. B. S. Jackson presented some Bulbous roots, which were brought from the Bay of San Francisco, California, by Capt. John Girdler, of Marblehead, who stated that they were in use there as a substitute for soap. They were referred to Mr. Teschemacher.

Dr. C. T. Jackson nominated Mr. S. L. Bigelow for election as a member of the Society.

December 2, 1846.

Dr. C. T. Jackson, Vice President, in the Chair.

Dr. Gould continued his descriptions of Succinea.

Succinea Magellanica. Testa parva, tenuis, subflexilis, lucida, nitida, intensè virens, rotundato-ovata: spira brevis, acuta, anfr. 3, suturâ profundâ discretis, ultimo amplo, ventricoso: apertura ovata; margine columellari reflexiusculo, callo tenui supernè munito. Long. $\frac{1}{3}$, lat. $\frac{2}{3}$, poll. *Hab.* Terra del Fuego.

A small, remarkably short and ventricose species, conspicuous also for its deep grass-green color.

Succinea manuana. Testa parva, ovata, ventricosa, tenuis, sub-opaca, straminea, longitudinaliter striata et transversè sparsim rugosa: spira obtusa, exserta, anfr. $2\frac{1}{2}$, ventricosis, suturâ profundâ discretis: apertura ovato-rotundata, peristomate ad columellam minimè reflexo; regione umbilicali depressâ, sinuosâ. Long. $\frac{1}{3}$, lat. $\frac{1}{5}$, poll. *Hab.* Manua.

A small, plump species, resembling S. *Magellanica*, but still more ventricose, and is further distinguished by its pale color and opacity.

Succinea modesta. Testa mediocris, ovata, tenuis, nitens, diaphana, stramineo-cornea, tenuiter striata, et lineis interruptis volventibus arata, subtus ventricosa : spira reflexa, anfr. 3, ventricosis : apertura rotundato-ovata ; columellâ arcuatâ incrassatâ, sub-perforatâ ; plicâ conspicuâ. Long. $\frac{1}{3}$, lat. $\frac{2}{5}$ poll. *Hab.* Upolu.

Like a small S. *campestris*, Say. Differs from the next species by its shorter spire, pale greenish color, and more arcuated columella.

Succinea venusta. Testa mediocris, ovata, tenuis, pellucida, nitida, ordinatim striata, epidermide succineâ, interdum virescente induta, subtus gibbosa : spira conspicua, obtusiuscula, anfr. $2\frac{1}{2}$ rotundatis : apertura ovata, longitudinis testæ duos trientes adequans, posticè angulata ; columellâ obliquâ, absque plicâ. Long. $\frac{9}{10}$, lat. $\frac{1}{4}$, alt. $\frac{1}{5}$ poll. *Hab.* Hawaii.

Almost exactly like S. *ovalis*, Say, but is a little more corpulent. It is less elongated than S. *pudorina*, more shining and differently colored.

Succinea pudorina. Testa elongata, ovato-turrita, tenuis, lucida, striis conspicuis longitudinalibus notata, succineo-rubescens : spira elevata, anfr. 3 cylindraceis valdè obliquis et suturâ profundâ discretis composita. Apertura testæ trientes duos adequans, elongato-ovata, angusta : columella obliqua, sub-recta, vix plicata. Long. $\frac{11}{20}$, lat. $\frac{3}{10}$, alt. $\frac{1}{3}$ poll. *Hab.* Mountains of Taheiti and Eimeo.

Very much like S. *oblonga*, Drap. It is more slender, the aperture narrower, and the penult whorl nearly twice as long.

Succinea infundibuliformis. Testa acuto-conica, infundibuliformis, ad basim perobliquè truncata, concinnè striata, opaca, viridis : spira obtusa, anfr. $2\frac{1}{2}$ planulatis, ultimo magno ; suturâ lineari : apertura rotundato-ovata ; margine sinistro inflexo, ad peripheriam carinato. Long. $\frac{7}{10}$, lat. $\frac{7}{20}$ poll. *Hab.* Mountains of Taheiti and Eimeo.

A most remarkable tunnel-shaped species, resembling precisely the sugar-cockles of the confectioners. It is allied to S. *procera*, which has all the outlines a little convex, an amber color, and no inflection of the columellar margin.

Succinea procera. Testa magna, elongata, lanceolata, fulvo-cornea, striis incrementalibus crassis rugosa : spira acuta, anfr. 3 perobliquis convexiusculis composita, partem longitudinis ferè dimidiam æquans : apertura ovato-oblongata ; labro posticè decurrente ; columellâ arcuatâ, sub-incrassatâ. Long. $\frac{7}{10}$, lat. $\frac{3}{10}$ poll. *Hab.* Eimeo.

A large, remarkably slender species, of coarse exterior, allied to S. *infundibuliformis*, and much resembling *Limnea umbrosa* in form.

Succinea rusticana. Testa elongata, ovato-conica, tenuis, pallidè virens, impolita, lineis incrementalibus inequalibus et crassis striata, subtus convexa : spira acuta, anfr. 3 convexiusculis : apertura ovata, quadrantes tres longitudinis adequans ; columellâ arcuatâ, perspicuè plicatâ. Long. $\frac{1}{2}$, lat. $\frac{1}{4}$ poll. *Hab.* Oregon.

Dr. Cabot presented and described a specimen of Pyranga.

P. roseo-gularis. Cabot. Male, top of head, outer edge of primaries and secondaries, and surface of greater and lesser wing coverts, the tail and its upper coverts, bright brownish-red. Under side of tail and its under coverts, throat and flexures of wings, bright rose-color. Back and posterior part of cheeks dark brownish ash-color; anterior part of cheeks, breast, and belly, bright ash-colored. Twelve tail feathers. Bill strongly toothed, horn-color at top, lighter beneath. Legs and feet horn-colored. Total length $6\frac{1}{4}$ inches; of bill $\frac{5}{8}$ inch ; along the ridge $\frac{6}{8}$; along the gape $\frac{5}{16}$ of an inch ; across at base $\frac{3}{8}$ through from above down. Tooth situated at $\frac{1}{4}$ inch from point of bill. Tarsus rather more than $\frac{3}{4}$ inch in length. Tail $2\frac{6}{8}$ inches long. Wing from flexure $3\frac{1}{8}$ inches.

Shot on the road from Chemax to Yalahao, Yucatan, April, 1845.

Prof. Agassiz made some remarks upon the Moose and Caribou (*Cervus alces and tarandus, auct.*)

These species were usually supposed common to this country and Europe, but were in fact both different from the analogous species of the old world. He indicated some of the points of

difference in the form of the nose, the shape and branching of the horns, &c. He proposes the name of C. *lobatus* for the Moose, and that of C. *hastalis* for the Caribou.

He also remarked upon some species of Birds, usually considered common to the two continents. Richardson, visiting the northern regions, had been impressed with the opinion that a large proportion of the species of Birds and Mammalia were the same as those of Europe. Prince Canino, making his observations in a lower latitude, had come to an opposite conclusion, and pronounced them all different. The fact doubtless is, that species inhabiting the Arctic regions of both continents are frequently common to both, while those of lower latitudes are usually distinct. The American Raven being different from the European, and not yet introduced under a proper name, he proposes to call it C. *lugubris*.

Dr. Cabot read extracts from a Catalogue of Birds, observed in the neighborhood of Chicago, Ill., by Mr. S. C. Clark.

Mr. Bouvé exhibited specimens of Spherulites and Hippurites from Mount Lebanon.

Mr. Teschemacher reported on the Bulbous roots, presented by Dr. J. B. S. Jackson, as coming from California, and there used as a substitute for soap.

They are, in his opinion, the bulbs of an Ornithogalous plant, called *Phalangium Pomeridianum*. Mr. T. stated, that he had cultivated this plant, received from California, during five or six years. It always produced leaves in abundance, but he was never able to make it blossom.

Dr. W. F. Channing presented specimens of the eyeless Crawfish, from the Mammoth Cave in Kentucky, and gave some account of its habits. Prof. Agassiz was requested to examine the specimens.

Mr. S. L. Bigelow was elected a member of the Society.

ADDITIONS TO THE LIBRARY.

Sept. 19. Annals and Magazine of Natural History, for September, 1846. 8vo. London. *By purchase.*

Gray's Genera of Birds. Part 29. For September, 1846. *Exchange.*

Annals of the Lyceum of Natural History of New York. Vol. III., Nos. 1–4, and Vol. IV., Nos. 1–4, and 6, 7. 8vo. New York, 1828–'46. *From the Lyceum Nat. History.*

Oct. 10. Naturgeschichte der Infusionsthiere von Professor S. Kutorga. 8vo. pam. St. Petersburgh, 1839.

Atlas to the above. 4to. pam. Carlsruhe, 1841. *From Charles Cramer.*

Report of the Commissioner of Patents. Congressional Document. 8vo. Washington, 1846. *R. C. Winthrop.*

Oct. 22. Gray's Genera of Birds. Part 30. *Exchange.*

Annals and Magazine of Natural History. No. 119. For October, 1846. *Purchase.*

Nov. 3. Second Annual Report on the Geology of Vermont. By C. B. Adams. 8vo. pamph. Burlington, 1846. *Author.*

Silliman's American Journal of Science and Arts. No. 6, second series; for November, 1846. *Exchange.*

Nov. 19. L'Investigateur, Journal de l'Institut Historique; 145me livraison. September, 1846. 8vo. pam. *Institute.*

Haldeman's Monograph of Fresh water Univalve Mollusca. 8vo. pam. No. 8. Philadelphia. *Author.*

Volcanoes of the Moon, by James D. Dana. 8vo. pam. New Haven, 1846. *Author.*

Proceedings of the American Philosophical Society. Vol. IV. No. 35, for January – June. *American Phil. Society.*

Gray's Genera of Birds. Part 31. *Exchange.*

Annals and Magazine of Natural History. No. 120. For November, 1846. *Purchase.*

Nov. 20. Plates to Audubon's Quadrupeds of North America. Nos. 91–95. *Subscribers.*

Nov. 29. American Quarterly Journal of Agriculture and Science. Vol. IV., No. 2. 8vo. New York, 1846. *Editors.*

Proceedings of Academy of Natural Sciences. Vol. III., Nos. 4, 5. 8vo. pamph. Philadelphia.

Dec. 12. Caricis Species Novæ, vel minus cognitæ. Auctore Francisco Boott. 4to. pamp. London, 1846. *Author.*

Dec. 17. Plates, 96–100, Audubon's Quadrupeds of North America. *Subscribers.*

Dec. 18. Gray's Genera of Birds. Part 32. For December, 1846. *Exchange.*

Annals and Magazine of Natural History. No. 121. For December, 1846. *Purchase.*

Report of the Season of 1846. Published by request of the Middlesex County Agricultural Society. By Joseph Barratt. 8vo. pamp. Middletown, Conn. *Author.*

December 16, 1846.

Dr. C. T. Jackson, Vice President, in the Chair.

Dr. Gould continued his description of Shells from the Exploring Expedition.

Bulimus elobatus. Testa solidula, elongato-ovata, longitudinaliter plicoso-striata et lineolis volventibus interruptis corrosa, epidermide sordidè luteo et viridi marmoratâ induta, arctè umbilicata: spira anfr. 5 convexis, ultimo magno: apertura angusta, sub-elliptica; labro simplici, obtuso, aurantio; plicâ columellari perobliquâ. Long. $2\frac{1}{4}$, lat. $1\frac{2}{5}$ poll. *Hab.* Feejee Islands.

Belongs to the same group as B. *fulguratus* and B. *malleatus*, characterized by the large fold on the columella. It is the largest of the three, resembling the former in its sculpture and the coloring of the aperture, and the latter in coloring. It is distinguished by its unreflected lip, its narrow aperture, less conspicuous and more oblique columellar fold, more ventricose and less oblique whorls.

Bulimus morosus. Testa crassa, rudis, ovata, albido-cinerea, longitudinaliter striata, arctè umbilicata; spira anfr. 5 convexis: apertura subauriculata; peristomate latissimè revoluto, albo, posticè angulato; plicâ columellari amplâ. Long. $1\frac{3}{4}$, lat. 1 poll. *Hab.* Feejee Islands.

Of the same group as the preceding, but is smaller, more solid and less elegant than its associates. Its want of epidermis and colors, its angular outline and very broad, revolute lip, characterize it.

Bulimus prolatus. Testa ovoidea, antrorsum angustata, leviter striata, albido-cinerea, fasciis quatuor liturarum ferrugineearum cincta : spira ovato-conica ; anfr. 5 convexiusculis : apertura elliptica, totius longitudinis dimidium adequans ; labro simplici, acuto : columella brevis, latè reflexa, alba, umbilicum parvum tegens. Long. $1\frac{3}{4}$, lat. 1 poll. *Hab.* Santiago, Chili.

A shell of a remarkably regular, elongated ovoid form, somewhat like B. *Favannii*, only more narrowed anteriorly, and distinguished by its four bands of rusty blotches.

Bulimus ciliatus. Testa tenuis, ovato-conica, viridis, striis volventibus, cilias rigidas nunc longas nunc breviores gerentibus, cincta : spira acuta, anfr. 6 convexis, ultimo magno, ventricoso, sub-angulato : apertura sub-ovata, anticè angustata ; labro simplici ; columellâ rectâ, albâ, umbilicum parvum obtegente. Long. $\frac{9}{10}$, lat. $\frac{6}{10}$ poll. *Hab.* Organ Mountain, Brazil.

This shell, with its thick, dark green epidermis, looks like a Paludina. P. *velutino-hispidus* of Moricand, another hairy species, is more globular.

Bulimus pruninus. Testa ovato-turrita, solida, leviter striata, livido-purpurea, infra suturam et circa umbilicum albido zonata · spira acuta, anfr. 6, convexiusculis, subtabulatis : apertura modica, ovata ; labro simplici, intus callo stramineo incrassato, ad columellam reflexo ; fauce livido. Long. $\frac{7}{8}$, lat. $\frac{3}{8}$ poll. *Hab.* ?

This is a solid, elongated, peculiar species, probably belonging to South America.

Bulimus hybridus. Testa crassa, elongato-ovata, polita, castanea, lituris ochraceis admodum obliquè ordinatis maculata : spira anfr. 6 convexis, sub lente spiraliter striatis ; ultimo magno sub-compresso, ad basim obliquè carinato et rimâ umbilicali perforato : apertura angustata, elongato-elliptica, anticè angulata et canaliculata ; labro crasso, latè reflexo, rubro-purpureo ; fauce roseo. Long. $1\frac{3}{4}$, lat. $\frac{5}{8}$ poll. Vicinity of Rio Janeiro.

A beautiful shell, intermediate between B. *goniostoma* and B. *multicolor*, having the aperture of the former, and the size, form and marking of the latter.

Bulimus junceus. Testa parva, elongato-conica, tenuis, translucida, dilutè virens, concinnè striata, vix perforata : spira

ad apicem obtusa; anfr. 7, convexiusculis, supernè con-tabulatis: apertura elongato-ovata; labro simplici, ad columellam vix reflexo. Long. $\frac{3}{10}$, lat. $\frac{1}{10}$ poll. *Hab.* Society and Sandwich Islands.

A delicate, slender shell, varying a good deal in size, and closely allied to, if not the same as B. *clavula*, Quoy, B. *bacterionides*, D'Orb., and B. *octonoides*, Adams, from the West Indies. Perhaps it is a species attached to the plantain, cocoa-nut, or some other tropical plant.

Mr. Bouvé exhibited an Echinus from the Millstone Grit of Georgia, which he considered a new species of the genus Pygorhynchus of Agassiz; and of which he gave a description.

Pygorynchus Gouldii. Bouvé. Above, conico-convex, a little more sloping posteriorly than anteriorly. Margin somewhat rounded, except, near and under the anus, where by an excavation or depression, it becomes acute. Inferior surface sub-circular. Mouth situated about one third of longitudinal diameter from the anterior margin. Apex sub-central, a little anterior, but not so much so as the mouth. Ambulacra radiating at unequal angles, the interambulacral spaces dividing the three anterior from the two posterior, being wider than the rest. The pores of each diverge considerably from the apex, becoming quite dilated a short distance from it, then converge as they descend, until about two-thirds the distance from the summit to the margin, where they are very limited in width, and where the double rows become single. On the margin they again slightly dilate, and are readily traceable to their termination about the mouth, where they are prominent. The anterior ambulacrum is much narrower than the rest. Anus transverse, and situated at about one-fifth the distance from the posterior margin to the apex. Whole length, as shown by three individuals examined, $1\frac{7}{8}$ inches, greatest width $1\frac{3}{4}$ inches, height 1 inch. Locality, Baker County, Georgia. Description of characters from specimens in Cabinet of the Society.

I take great pleasure in naming this beautiful species after my respected friend, Dr. Augustus A. Gould.

Professor Agassiz remarked of the rock in which this specimen occurred, that it was the oldest member of the tertiary group, if not, as some supposed, belonging to the cretaceous; the name of Pisolitic system had been applied to it by Elie de Beaumont.

He also pointed out the characters in which his genus Pygorhynchus differs from Clypeaster and Echinolampas.

Both have the ambulacra petaloid, an anterior mouth, and posterior anus. Echinolampas has no teeth, and the interior of the body is a simple cavity. Clypeaster has five teeth, and the internal cavity divided by columns. Pygorhynchus is distinguished by a depression at the anus, the ambulacra elongated and distinct to the margin. The mouth is transverse, but in the other genera direct. He pronounces the species exhibited by Mr. Bouvé decidedly new.

Dr. W. F. Channing gave an account of the Crawfish from the Mammoth Cave, Kentucky, presented by him at the last meeting.

He remarked that, like everything else having life in the cave, it was colorless. There were points, in the ordinary position of the eyes, which might prove to be those organs or their rudiments. A Crawfish of the common species was caught in the cave at nearly the same time as the present specimen, having undoubtedly entered during a flood of Green River, which occurred at the time, and during which the waters back up into the cave. This would explain, perhaps, the original introduction both of the blind fish and of the crawfish, but would make it remarkable that the species had continued distinct.

Professor Agassiz had examined the Crawfish presented by Dr. Channing.

The eye of this class of Crustaceans is placed upon a pedicle, and appears like a bulb covered with facets. In this specimen the pedicle exists, but the bulb with facets is wanting; and consequently there is no eye, though he supposed the eye to exist in a rudimentary state; but the specimen was not in a state to admit of ascertaining whether or not the optic nerve existed. The

species had been described by Tellkampf, and named *Astacus pellucidus.*

Prof. A. mentioned a remarkable fact, ascertained by Erichson, with regard to the Crawfishes of America. They have all one pair of gills less than those of the old world.

Dr. Channing also presented to the collection of the Society a large umbel-shaped mass of Fossil Coral, which seemed to constitute an entire individual, and which is a specimen of similar masses which occur scattered through the limestone near Sharon Springs, Schoharie county, New York. No attempt was made to name it, or give its special characteristics.

Dr. C. placed upon the table some of the Seeds of the Wild Oat, with the beard attached, procured by him from the uplands of the prairies in Wisconsin during the past summer. The beards of these were in some instances five inches long, and presented the spiral structure which gives the smaller variety of animated oat its peculiar sensitiveness to moisture. These specimens were picked on the 28th of June, before the seed was quite mature, and, perhaps on this account, seemed to be only slightly influenced by hygrometric changes. The stalk grows about three feet high ; and as the supply is very large, especially in Middle and Northern Wisconsin, it may be worth while to remember the locality.

Dr. C. also exhibited some cases of the larvæ of trichopterous insects from a pond in the north of New Hampshire. These cases were spoken of as remarkable from their shape, which was an elongated quadrilateral pyramid, presenting right angles and flat sides. The larva exhibits very brilliant colors of black and green.

Dr. Channing presented a fragment of a leaden conduit from Pompeii.

He had intended to have made an examination of the change the metal had undergone from the lapse of time, but had not yet done so. He offered it to any gentleman who might be disposed to examine it. At the request of Dr. Jackson, he consented to resume it, and pursue the inquiry himself.

Dr. C. T. Jackson read, from English papers and periodicals, notices of Gun cotton, with a view of showing the date

at which the process of preparing the article was disclosed in this country.

Dr. Bacon stated that he had examined, under the microscope, specimens of Gun cotton prepared by Dr. C. T. Jackson, and also some prepared by himself.

Specimens of the Cotton, before and after preparation, were put up in Canada balsam on slips of glass, and covered by very thin glass. When viewed by transmitted light, with powers from 150 to 800, many of the fibres of the Gun cotton appear thickened, but no other change can be perceived on comparison with the unprepared article. There is no appreciable difference in the transparency of the two.

They were now examined in polarized light by means of the polarizing attachment to the microscope. When the polarizing and analyzing prisms are so arranged as to afford a dark field, the riband-like fibres of the cotton before preparation are seen as luminous objects upon a black ground, and are tinged with bright and varied colors. They are thus proved to possess a strong polarizing power. The Gun cotton, under the same circumstances, presents an entirely different appearance. Its fibres are much less luminous, and have a nearly uniform dull blue color. It is evident that the process of preparation has so altered the structure of the fibres as to lessen very greatly their action on polarized light.

Gun cotton prepared by Dr. Jackson by immersion for twelve and for eighteen hours in the strongest acids, has not lost its polarizing power in any appreciably greater degree than after an immersion of three minutes only. This agrees with the results of other modes of trial in indicating that the latter period is sufficient for the complete preparation of the Cotton, when the acids are of full strength. In all the specimens there are some filaments so nearly destitute of polarizing power as to be scarcely visible on the black ground, but none have been found entirely without action. When the polarizing and analyzing prisms are in such a position as to give a bright field, a portion of the fibres becomes tinged with a color approaching to orange, while the remainder appear colorless as in ordinary light.

Mr. Horace Gray, Jr. was nominated for election as a member of the Society, by Mr. Dillaway.

ADDITIONS TO THE LIBRARY.

Plates to Audubon's Quadrupeds of North America, Nos. 91 to 95. *Subscribers.*

American Quarterly Journal of Agriculture and Science, Vol. IV. No. 2. 8vo. New York. *Editors.*

Proceedings of the Academy of Natural Sciences, Vol. III. Nos. 4, 5. 8vo. pamph. Philadelphia. *The Academy.*

Caricis Species Novæ vel minus cognitæ. Auctore Francisco Boott. 4to. pamph. London, 1846. *Author.*

January 6, 1847.

Dr. C. T. Jackson, Vice President, in the Chair.

Dr. Gould gave descriptions of the following species of Partula, Pupa, and Balea, collected by the Exploring Expedition.

PARTULA CONICA. Testa elongato-conica, interdum sinistrorsa, flavida vel castanea, leviter striata et lineis crebris volventibus decussata, latè perforata : spira elevata, acuta, anfr. 6 ventricosis, ultimo permagno; suturâ impressâ, albidâ : apertura obliqua, ovalis ; peristomate albo vel rosaceo, latè reflexo, sub-planulato. Long. $1\frac{1}{10}$, lat. $\frac{11}{20}$ poll. *Hab.* Samoa Islands, Raraka Island.

Larger than any species hitherto described, and resembling *Bulimus lævus* in form. It may possibly be P. *bulimoides*, Lesson.

PARTULA ZEBRINA. Testa variabilis, ovata, tenuis, alba, flava vel fulva, plerumque strigis longitudinalibus flexuosis albis variegata, spiraliter tenuistriata, umbilico rimato perforata : spira anfr. ad 5 rotundatis, ultimo ventricoso : apertura elliptica, peristomate albo, latè reflexo, planulato ; plicâ columellari magnâ. Long. $\frac{8}{10}$, lat. $\frac{1}{2}$ poll. *Hab.* Tutuilla, Samoa Islands.

A rather large and very fine species, more ventricose than

others, and distinguished by its perfectly flattened peristome, as well as by its variegated coloring and revolving striæ.

Partula pusilla. Testa parva, elongata, conica, polita, albido-cornea, perforata: spira acuta, anfr. 6 convexis, supernè tabulatis: apertura sub-quadrata, posticè lamellâ intro-volvente instructa; peristomate reflexo, dextrorsum sinuato. Long. $\frac{3}{20}$, lat. $\frac{3}{40}$ poll. *Hab.* Matea Island, under stones.

This little species bears all the characters of the group, and is by far the most minute species yet described.

Pupa (Vertigo) tantilla. Testa minima, sub-ovalis, albida, perforata: spira obtusa; anfr. 4 convexiusculis, supernis subclathratis, ultimo exiliter rugoso-granulato: apertura sub-rotunda, peristomate everso; fauce dentibus 5 armato, quorum uno columellari, uno basali, uno labiali et duobus posticis. Long. $\frac{1}{15}$, lat. $\frac{1}{20}$ poll. *Hab.* Taheiti, 2000 feet elevation.

About the shape and size of P. *Gouldii*, and with the same number of teeth, but has two of them on the transverse lip, instead of on the columella.

Pupa peponum. Testa minuta, variabilis, ovata, plus minusve elongata, tenuis, lucida, nitida, fulvo-cornea, perforata: spira anfr. 6 convexis leviter striatis: apertura ovato-rotundata, posticè lamellam volventem gerens; labro simplici, ad columellam plerumquè late revoluto; columellâ vel nudâ vel lamellis transversis 1-3 instructâ. Long. $\frac{3}{20}$, lat. $\frac{3}{40}$ poll. *Hab.* Sandwich Islands; very abundant on pumpkin vines.

This interesting little shell is of somewhat doubtful genus. It may prove to be of the genus Tornatellina or Elasmatina. Its very variable characters render a decision difficult. But it belongs to the old genus Pupa, where I at present place it.

Pupa (Megaspira) elata. Testa sub-cylindrica, elevata, tenuis, nitida, striis conspicuis lirata, cornea, lituris parvis sparsis propè suturam notata, vix perforata: spira obtusa, anfr. 19 angustis sub-planulatis: apertura parva, obliqua, lunata, anticè sub-effusa posticè lamellam volventem gerens; plica columellari modicâ, bilamellata. Long. $1\frac{1}{2}$, lat. $\frac{1}{3}$ poll. *Hab.* Brazil.

Compared with P. *elatior* it is smaller, more cylindrical, more delicately striated, more shining, the whorls more crowded, be-

ing as 19 to 16 in the same space, the columella smaller and with one fold less, the lip effuse and the umbilicus much smaller.

Balea peregrina. Testa parva, sinistrorsa, elongata, sub-fusiformis, solida, opaca, rufo-cinerea, vix striata, perforata : spira ad apicem mamillata ; anfr. 8, planulatis, sub-tabulatis ; suturâ lineari, profundâ : apertura sub-quadrata ; peristomate continuo, æquato, leviter reflexo. Long. $\frac{3}{8}$, lat. $\frac{1}{10}$ poll. *Hab.* N. Zealand.

I have referred this shell to the genus *Balea* with much hesitation, on account of its locality. It is remarkable for its fusiform, turreted shape, and for the high walls of its aperture, which rise to a level with the surface of the shell.

Dr. Storer read a letter from J. N. Bates of Barre, describing a variety of the Skunk, of a dark drab or cinnamon color, and destitute of black hairs ; and offering a specimen.

Dr. C. T. Jackson exhibited specimens of the cartilage remaining from Mastodon bones, after treatment by acid. He also detailed some experiments on Gun cotton.

A communication from Dr. G. A. Perkins was read, giving an account of an animal captured in the Caracalla river, about twenty miles east of Cape Palmas, West Africa ; called by the natives Ne-hoo-le, and belonging to the genus Manatus.

This animal has a flattened, cylindrical form, becoming gradually smaller at either end. The anterior extremities are situated at about $\frac{1}{5}$th the length of the body from the nose, resembling the "flippers" of the sea turtle, but without any appearance of a nail or claw. These members are flattened at the extremity, but thicker and more cylindrical at their union with the body ; the edge of the flattened extremity was slightly ragged and the corners rounded.

The upper lip was flaccid in its texture, studded on its under surface with short and thick bristles, and projected considerably over the lower ; the angles of the mouth were covered with short black hairs. The lower lip extended obliquely downwards, and formed a sort of chin $5\frac{1}{2}$ inches in length. The lower jaw was narrow and its edge covered with a thick and very firm elastic

black pad. There were no incisors, but seven grinders were visible in each side above and below, and two others behind these were concealed in the alveoli, making in all 36 teeth. The crowns were divided into two parts, and each of these was unequally subdivided into two others, the larger and inner having three small points or serrations. The space between the molars of the two sides was only $1\frac{1}{4}$ inch, which was filled by a tongue resembling somewhat that of a parrot.

The eye measured $\frac{1}{2}$ inch from angle to angle, and when closed its position could not readily be detected. The nostrils were situated about three inches from the edge of the upper lip, one and a quarter inches apart, of a somewhat triangular form and of a size sufficient to admit a man's finger. No external ear or meatus was detected.

The tail was flattened and fan-like, and in length nearly one-fourth that of the whole body. The skin was of a light lead color, fully one inch in thickness, exceedingly tough, and the cuticle and rete mucosum easily separating. The whole body was sparsely covered with short white hairs about one and a half inches apart. Between the skin and the muscles was a layer of cellular membrane filled with a white fat or oil, and which on the belly was three inches thick.

The mammæ were situated just beneath the posterior edge of the paddle or "flipper." The anus was two feet ten inches from the extremity of the tail, and five and a half inches behind the vulva. The stomach and intestines were filled with a vegetable substance resembling grass or the bark of young twigs, in the various stages of digestion.

The lungs were not distinctly lobed, and no septum like the diaphragm noticed, dividing the cavity of the thorax from that of the peritoneum.*

Dr. Perkins's communication was accompanied with drawings, and specimens of hair and cuticle.

* The animal above described by Dr. Perkins, differs from any of the species of Manatee hitherto noticed, in the number of the teeth, which are thirty-six, (Cuvier enumerating only thirty-two in the adult,) and in the absence of nails on the anterior extremities. If the observation with regard to the deficiency of the diaphragm is correct, it would indicate the existence of a peculiarity hitherto unnoticed in the class of mammals. As shown by Dr. Perkins's drawings, the nose is much sharper and longer than in the described species. It may be named *Manatus nasutus*. J. W.

Messrs. Horace Gray, Jr. and Charles C. Sheafe were elected members of the Society.

Dr. William Henry Thayer was nominated as a member of the Society, by Dr. Bacon.

January 20, 1847.

Dr. Storer, Vice President, in the Chair.

Dr. Gould gave descriptions of the following Expedition Shells of the genera Achatinella and Helicina.

Achatinella marmorata. Testa oblongo-ovata, coloribus castaneis, cinereis, et albidis marmorata, leviter striata, imperforata: spira acuta, anfr. 6 convexis, supernè sub-tabulatis, ultimo magno, ventricoso: apertura ovata; peristomate simplici, modicè evaso; plicâ columellari albâ, compressâ, ferè transversâ, valdè exstante. Long. $\frac{7}{8}$, lat. $\frac{1}{2}$ poll. *Hab.* Haleakala Mountains, Maui, Sandwich Islands.

A large ventricose species, readily distinguished by its variegated coloring.

Achatinella ellipsoidea. Testa solida, ellipsoidea, lævis, epidermide luteo interdum fusco zonato induta: spira anfr. 6, convexiusculis; suturâ impressâ: apertura parva, angusta; peristomate acuto, nigro; plicâ columellari ferè transversâ, tenui. Lat. $\frac{7}{20}$, alt. $\frac{7}{10}$ poll. *Hab.* Maui.

Closely allied to A. *microstoma*, which has a thickened lip, and a more dead, striated surface.

Achatinella acuminata. Testa parva, elongata, turrita, lucida, glaberrima, nitida, succinea; spira elevata, anfr. 6 obliquis, convexiusculis, ultimo trientes duo longitudinis equante: apertura angusta, sub-elliptica, peristomate albido, incrassato, prorsum arcuato; columellâ truncatâ, sed vix plicatâ. Long. $\frac{19}{40}$, lat. $\frac{1}{8}$ poll. *Hab.* Kauai, Sandwich Islands.

More elongated, and with more oblique whorls than other species. In its form, color and clearness, it may be compared with *Physa hypnorum.*

The clear, delicate species like this, with the mere semblance of a columellar fold, may properly constitute a distinct group, to which the name Leptachatina (λεπτος and Achatina) might be given.

Achatinella cerealis. Testa parva, elongata, cylindraceo-conica, impolita, cinereo-castanea : spira obtusa, anfr. 7-8 planulatis, ultimo trientem longitudinis vix superante : apertura parva, lunata, quadrantem longitudinis adequans ; peristomate simplici, intus incrassato ; plicâ columellari obsoletâ, anfractu penultimo callo induto. Long. $\frac{3}{8}$, lat. $\frac{1}{8}$ poll. *Hab.* Waianai, Oahu.

In size, form and color it resembles *Bulimus hordeaceus*, but it is still more slender.

Achatinella guttula. Testa parva, tenuis, lucida, rotundato-ovata, succinea, interdum castaneo zonata : spira obtusa, anfr. 6 convexiusculis ; ultimo tumido, dimidiam longitudinis superante. Apertura parva, lunata ; peristomate albo, incrassato, ad basim valdè truncato ; columellâ curtâ, plicâ parvâ instructâ, ad anfractum penultimum callo indutâ. Long. $\frac{1}{8}$, lat. $\frac{3}{16}$ poll. *Hab.* Maui, Sandwich Islands.

One of the smallest, and proportionally the shortest of the group, its length being but little greater than its breadth. It is much more ventricose and less solid than A. *accincta*, Mighels.

Helicina fulgora. Testa parva, lenticularis, acutè carinata, glabra, dilutè castanea, lineolis radiantibus angulato-flexuosis, propè suturam et ad carinam dilatatis, picta : spira depresso-conica, acuta ; anfr. 5-6 planatis : apertura lata, semilunaris ; peristomate reflexo, flavido, ad basim rectangulari ; columellâ rectâ, callo modico albido indutâ. Lat. $\frac{9}{40}$, alt. $\frac{5}{40}$ poll. *Hab.* Islands of Upolu and Manua, among bananas.

This species, with H. *laciniosa*, and H. *musiva*, belong to the same group with H. *flammea*, Quoy. These are smaller, and more globular ; the first has no reflected lip and the second no radiations beneath.

Helicina musiva. Testa parva, solidula, sub-globosa, polita, rufo-viridis, supra lineolis flexuosis albidis radiata : spira anfr. 4 rotundatis : apertura lunata ; peristomate reflexo, albido, ad basim rectangulari ; columellâ rectâ. Lat. $\frac{3}{20}$, alt. $\frac{1}{10}$ poll. *Hab.* Islands of Manua and Upolu, among plantains.

Closely allied to the preceding, but smaller, more globular, not carinated, and destitute of radiated coloring beneath.

Helicina trochlea. Testa minuta, trochiformis, supra cinerea, costis acutis volventibus 3 vel 4 (intervallis concavis, scabrosis) cincta, infra convexa, polita, citrina : spira anfr. 4, ultimo ad peripheriam bicarinato : apertura sub-trigona ; peristomate leviter reflexo ; columellâ ad basim angulatâ, callo copioso indutâ. Lat. $\frac{1}{8}$, alt. $\frac{3}{40}$ poll. *Hab.* Matea Island.

It has the size and nearly the form of H. *rupestris*, Pfeif., and is distinct from all others by its well-marked, sharp, revolving ribs.

Helicina multicolor. Testa parva, solidula, conico-globosa, tenuissimè striata, citrina, interdum fusco-fasciata, vel omnino fusco-rubra, subtus convexa : spira anfr. 4 convexiusculis, ultimo ad peripheriam rotundato ; suturâ impressâ : apertura lunata, lata ; peristomate simplici, acuto, ad basim obtusè angulato ; columellâ expansâ, callo copioso indutâ. Lat. $\frac{3}{20}$, alt. $\frac{1}{10}$ poll. *Hab.* Tongataboo.

A very delicate species, and one of the smallest known, and principally remarkable for its variable coloring.

Helicina uberta. Testa parva, solida, sub-globosa, lævis, dilutè citrina ; spira anfr. 4 ; suturâ impressâ : apertura parva, semilunaris, extrinsecus constricta ; peristomate simplici, vix reflexo ; columellâ callo flavo copiosissimo, haud appresso, indutâ. Lat. $\frac{7}{40}$, alt. $\frac{3}{20}$ poll. *Hab.* Maui, and Oahu Mountains.

Very remarkable for the abundant golden yellow callus which forms a tongue-like projection across the base of the shell.

Helicina beryllina. Testa solidula, depresso-conica, infra convexa, ad peripheriam obtusè angulata, polita, albido-virens : spira anfr. 5 planulatis, ultimo cito crescente ; suturâ lineari : apertura magna, transversè semi-elliptica ; peristomate simplici ; callo columellari latè expanso. Lat. $\frac{1}{2}$, alt. $\frac{3}{8}$ poll. *Hab.* Feejee Islands.

Rather large as to size, and remarkable for its delicate beryl-green tint and polished surface. The outer whorl enlarges very rapidly. In form it resembles H. *similis*, Sowb.

Helicina pallida. Testa lenticularis, solidiuscula, luteo-ci-

nerea, inequaliter striata, epidermide tenuissimâ induta : spira depressa ; anfr. 5 acutè carinatis, planatis : apertura semilunaris, ad columellam callosa ; labro modicè reflexo. Lat. $\frac{3}{10}$, alt. $\frac{3}{20}$ poll. *Hab.* Feejee Islands.

Resembles somewhat H. *miniata*, Lesson, which is more solid, polished, lip simple, suture double. In shape and color it is like H. *oxystoma*, Gray, but is smaller, and the lip not angular at the carina.

Dr. Storer read an interesting letter from Dr. Forsyth of Chelsea, on the several varieties of Trout, that inhabit the brook or the sea, observed by him at Sandwich, on Cape Cod ; describing the peculiarities of each, with anecdotes of the mode of capture, habits, &c.

Dr. Cabot called attention to a vegetable specimen received from Dr. Cragin, with the following memorandum.

"The remains of a twig, having originally large green leaves, which, instead of decomposing and decaying in the usual way of dead leaves, are, not unfrequently, found in this state in the woods of Surinam."

It was committed to Mr. Teschemacher.

Dr. Cabot also gave notice of the receipt from Dr. Cragin of twenty-four Bird Skins, and five Birds in spirits, all of which were new to our Cabinet, and he thought many of them undescribed species. There were also jars of Reptiles, &c. The thanks of the Society were voted to Dr. Cragin.

The use of the Hall of the Society was voted to Dr. Wyman, for a course of lectures which he proposes to give in the ensuing spring ; with liberty to use such of the specimens as he may require for the same.

Dr. William Henry Thayer was elected a member of the Society.

ADDITIONS TO THE LIBRARY.

Report on the Season of 1846, published by request of the

Middlebury County Agricultural Society. By James Barratt. 8vo. pamph. Middletown, Conn. *From the Author.*

Essay upon the Wheat Fly, and some species allied to it. 8vo. pamph. Albany, 1846. By Asa Fitch. *Author.*

Silliman's American Journal of Science and Arts, No. 7, for January, 1847. *Editors.*

Fourth Bulletin of the National Institute. 8vo. pamph. February, 1845 to November, 1846. *National Institute.*

Annals and Magazine of Natural History, No. 121, for December, 1846, and Nos. 122 and 123, for January, 1847. 8vo. pamph. *Courtis Fund.*

Gray's Genera of Birds. Parts 32 and 33. London. *Audubon Fund.*

February 3, 1847.

Dr. Storer, Vice President, in the Chair.

The following species of Cyclostoma, from the collection of the Exploring Expedition, were presented by Dr. Gould.

Cyclostoma tiara. Testa solida, turbinata, rudis, distorta, sordidè alba, latè umbilicata: spira anfr. 5 laxis, rotundatis, spiraliter liratis, supernis undulatis; inter liros lineis incrementalibus confertè clathratis: apertura circularis, peristomate simplici. Lat. $\frac{3}{4}$, alt. $\frac{1}{2}$ poll. *Hab.* Upolu.

This rather large species stands at the head of a group of rude and very variable species from the Pacific Islands. They have a bony structure, are coarsely indented, and grooved spirally, often have the whorls nearly disjoined, and the umbilicus so large as to approximate to Solarium.

Cyclostoma strigatum. Testa solida, orbiculato-conica, pallidè beryllina, supra costulis cingulata, infra sub-planulata, umbilico amplo et carinâ acutâ impendente limitato perforata: spira anfr. 5 convexis, suturâ benè discretis, ultimo propè aperturam despecto, ferè disjuncto: apertura circularis; peristomate simplici, everso, acuto. Lat $\frac{9}{20}$, alt. $\frac{3}{10}$ poll. *Hab.* Upolu.

Not half so large as the preceding, and may be known by its

uniform fluting, its sub-globose form, its plain, flattened base, and ample tunnel-shaped umbilicus, margined by an overhanging carina.

Cyclostoma plicatum. Testa parva, solida, rudis, pyramidata, cinereo-virens, plicis confertis obliquis rugata, et striis minutis volventibus cincta: spira acuta, anfr. 6 rotundatis et suturâ benè discretis, ultimo ad peripheriam rotundato; infra convexa et umbilico modico acutè marginato perforata: apertura circularis; peritremate simplici. Lat. $\frac{2}{5}$, alt. $\frac{2}{5}$ poll. *Hab.* Upolu.

Differs from the preceding in its more elevated, acutely conical form, its plaited whorls without prominent revolving lines, its rounded periphery and base, and its more contracted umbilicus. The young are discoidal, without folds, but with somewhat nodular spiral lines and bright beryl-green color.

Cyclostoma obligatum. Testa parva, crassa, sub-globosa, cinerea, arctè perforata, utrinque sulcis et costulis acutis subcrenulatis equalibus cincta, et lineis incrementi subtilissimis striata: spira acuta, anfr. 5 rotundatis: apertura parva, ovata; peristomate simplici, crasso. Lat. $\frac{5}{16}$, alt. $\frac{3}{8}$ poll. *Hab.* Matea.

Still smaller than C. *rugatum*, and remarkable for its solid structure, its coarse alternate ridges and grooves, and its small ovate aperture. It looks not unlike some specimens of *Littorina rudis*.

Cyclostoma diatretum. Testa planorboidea, albido-cornea, supra costis distantibus, ad intervallos cincinnè clathratis, angulata, latè umbilicata: spira planulata, anfr. 4 cylindraceis, rapidè crescentibus, propè suturam decliventibus: apertura circularis; peristomate simplici. Lat. $\frac{2}{5}$, alt. $\frac{1}{5}$ poll. *Hab.* Sandalwood Bay, Feejee Islands.

Answers very nearly to the description of C. *orbella*, Lk. The whorls increase more rapidly, the costæ are more distant above, and the umbilicus is less broad and open.

Cyclostoma roseum. Testa parva, solida, elevato-conica, glabra, pallidè rosea: spira acuta, anfr. 6 convexiusculis, supra arctè tabulatis; suturâ benè impressâ: apertura spiram haud equans, ovata; peristomate eversa, acutâ; fissurâ umbilicali costâ circumambiente finitâ. Lat. $\frac{1}{5}$, alt. $\frac{7}{20}$ poll. *Hab.* Feejee Islands.

This shell, with several others from the Pacific Islands, forms a group characterized by their slender, elevated form, and the rib which circumscribes the umbilical region. It is more deeply and uniformly colored than C. *rubens*, Quoy, which is also smaller, thinner, and has a much larger umbilicus.

Cyclostoma terebrale. Testa parva, turrita, acuminata, flavida vel dilute cornea, lævigata, umbilico rimato circumvallato perforata: spira elevata, acuta, anfr. 6-8 convexiusculis, anticè sub-angulatis, sesc partim obtegentibus; suturâ impressâ; apertura sub-rotunda, posticè angularis, campanulata; peristomate simplici, anfractui penultimo latè adnato. Lat. $\frac{1}{10}$, alt. $\frac{1}{4}$ poll. *Hab.* Taheiti and Eimeo.

Distinguished from allied species by its acuminated spire, angular, imbricated whorls and expanded aperture. It bears a general resemblance to *Pupa fallax*, Say.

Cyclostoma vallatum. Testa parva, solida, elongato-conica, lucida, fusco-cornea: spira anfr. 6 convexis, sub-angulatis, ultimo costâ validâ umbilicum ambiente munito; suturâ profundâ: apertura obliquè ovata; peristomate continuo, simplici, campanulato. Lat. $\frac{1}{8}$, alt. $\frac{1}{5}$ poll. *Hab.* Tongataboo.

Cyclostoma scitulum. Testa parva, elongato-conica, tenuis, rufo-cornea, striis incrementi tenuibus solum insculpta, arctè umbilicata: spira elevata, anfr. 6-7 rotundatis, supernis sub-angulatis; suturâ profundâ: apertura rotundato-ovata, parva, trientem longitudinis adequans; peristomate simplici, pallido. Long. $\frac{1}{5}$, lat. $\frac{1}{10}$ poll. *Hab.* Taheiti and Eimeo, Manua.

Almost exactly like *Amnicola Sayana*, Anth. It is larger and more ventricose than C. *vallatum*, and is distinguished from C. *terebrale* by its less slender form and unexpanded lip.

Dr. Cabot stated that two specimens of the Cinereous Owl had been procured lately, by Prof. Agassiz. One was shot in Vermont, the other in Cambridge.

Mr. S. L. Bigelow read a paper on the Trout of Monadnock Pond; giving details of their habits, as observed by himself, and anecdotes of the different modes of capture, &c.

Dr. Storer submitted the following Resolutions, which

were unanimonsly adopted ; and it was voted that a copy thereof be left at the Library room, to receive the signatures of members.

Resolved, That the Society present to Professor Agassiz their heartfelt thanks for the gratification and instruction received by its members during his late course of lectures on the " Plan of Creation."

They would assure him that his lectures have given an impetus to the study of Natural History, such as has never before been felt in this community ; and which, while they have excited the curiosity and called forth the admiration of the public, have more than realized the most sanguine expectations of this scientific Society.

While, as a body, we would thus tender our acknowledgment to the liberal naturalist and enlightened philosopher, we beg him to accept our individual esteem and friendship.

ADDITIONS TO THE LIBRARY.

Transactions of the Linnæan Society, Vol. XIX. Parts 2, 3, 4 ; Vol. XX. Parts 1 to 4. London, 1843 to 1846. *From the Linnæan Society.*

Proceedings of Linnæan Society. Pages 89–304. January, 1841 to May, 1846. 8vo. London. *Linnæan Society.*

James D. Dana on the Origin of Continents. 8vo. pamph. 1846. *Author.*

James D. Dana on Zöophytes. No. 3. 8vo. pamph. 1846. *Author.*

Report of the Trees and Shrubs growing naturally in the Forests of Massachusetts. Published by the Legislature. 8vo. Boston, 1847. *From G. B. Emerson.*

February 17, 1847.

Dr. C. T. Jackson, Vice President, in the Chair.

Mr. S. L. Bigelow, by request, read the paper on the Trout of Monadnock Pond, which was submitted at the

last meeting; and it was referred to the Publishing Committee.

Dr. Gould read interesting extracts from a letter lately received from Rev. F. Mason, of Tavoy, accompanying valuable contributions for the Cabinet, and giving many interesting details relating to the habits of the animals sent. The specimens presented were, the head and portions of the Skin of a Python, Horns of the Muntjak and Rusa Deer, Reptiles, Insects, Plants, Shells, and various other articles.

Dr. G. also read descriptions of four species of Truncatella from the Collection of the Exploring Expedition.

Truncatella aurantia. Testa parva, decollata, conico-cylindracea, aurantia, sub-perforata, longitudinaliter confertim clathrata; clathris elevatis, rectis, numero ad 40 in singulis anfractibus: spira anfr. 5 convexis: apertura obliqua, ovata; peristomate albo, continuo, reflexo. Long. $\frac{3}{10}$, lat. $\frac{1}{10}$ poll. *Hab.* Mangsi Island, Borneo.

Its principal characters are its large size, very convex whorls, and very numerous bars. T. *Caribbæorum*, Sowb. is often of the same color, but is more robust, the whorls less convex and the bars less numerous and less elevated.

Truncatella Vitiana. Testa decollata, conico-cylindracea, solidula, flavido-cinerea; spira anfr. superstitibus 4-5 planiusculis, costulis subrectis, elevatis, obtusis ad 30 clathratis: apertura obliqua, rotundato-elliptica; peristomate expanso, continuo, anfractui penultimo haud adnato, costâ marginato quæ posticè ad suturam producta est; operculum laminatum. Long. $\frac{3}{10}$, lat. $\frac{1}{10}$ poll. *Hab.* Feejee Islands.

One of the largest species, though it varies greatly in size. It is especially distinguished by the peculiar mode in which the lip forms its junction posteriorly. The bars also become fused posteriorly, so that the intervening flutings do not always reach the suture. It differs from T. *aurantia* in color, is more solid, and the bars are less numerous.

Truncatella porrecta. Testa parva, elongata, sub-cylindrica, decollata, albida; spira anfr. superstitibus 4 convexis,

clathris humilibus acutis ad 16 instructis, ad intervallos minutissimè et longitudinaliter striatis: apertura rotundato-lunata, ab anfractu penultimo latè sejuncta; peristomate continuo, extrorsum expanso: operculum laminis arrectis radiantibus eccentricis ornatum. Lat. $\frac{3}{40}$, alt. $\frac{1}{4}$ poll. *Hab.* Taheiti.

The distinguishing marks are, its slender form, unusually convex whorls, and the protrusion of the last whorl.

Truncatella rostrata. Testa parva, conico-cylindracea, nitida, decollata, incarnata, obliquè clathrata; clathris ad 12 robustis: spira anfr. 5 convexiusculis: apertura parva, obliquè ovata; peristomate continuo, crasso, albido, duplici, reflexo. Lat. $\frac{3}{40}$, alt. $\frac{9}{40}$ poll. *Hab.* Rio Janeiro.

In size and color it is much like T. *Cumingiana*, Adams, which is still smaller, has only 8 bars, which are whitish, more elevated and acute. The secondary lip gives the base of the shell, when viewed in profile, a rostrated appearance.

Dr. Storer submitted a letter from A. W. Chapman of Apalachicola, Florida, accompanying a package of Florida Plants, which "he desires to present to the Society, in return for its Proceedings and selections from its Journal, which he has from time to time received from its members, and read with much satisfaction."

The plants were committed to Mr. Teschemacher.

Mr. Edward Phillips was nominated for election as a member of the Society, by B. A. Gould, Esq.

March 3, 1847.

Dr. C. T. Jackson, Vice President, in the Chair.

Dr. Gould presented a paper, furnished for the Journal, by Prof. Dewey of Williams College, being a notice of a work entitled "Symbolæ Caricologicæ ad synonymiam Ca-

ricum extricandam, stabilandamque, et affinitates naturales eruendas ; auctore S. Drejer."

It was referred to the publishing Committee.

Dr. Gould also read extracts from a letter of Rev. Mr. Mason, referring to specimens of Insects, some of which he had forwarded to Dr. Gould. He mentioned others, which he had not sent, from an impression that they were too common.

Professor Agassiz remarked on the mistake which naturalists commit in overlooking the common productions of countries, in their search after rarities. It is the indigenous, and therefore the most common, productions of countries, which are most worthy of notice by native observers, and most likely to be interesting to foreigners, and not those which are rarely met with. The indigenous productions of America, for instance, are most the objects of curiosity in Europe, and those of Europe in America. The common household insects (Cimex, Blatta, &c.) are not without interest when met with in distant countries, from the question how far they have been changed by domestication and climate ; which question can only be answered by the observation of many specimens, and for the means of such comparison we might search in vain in our collections.

Count Pourtalés exhibited a dissection of *Natica heros*, showing the apparatus by which he supposed the animal perforates shells. Dr. Jackson remarked, that he had discovered slight signs of the existence of an acid in mollusca, by which they might be aided in effecting the perforations they make in shells and rocks ; he thought it possible such an acid might be furnished by the fluids of their stomachs.

Dr. Gould read descriptions of the following species of Limniadæ, from the Collection of the Exploring Expedition.

Ancylus aduncus. Testa exigua, obliquè conica, viridula, striis radiantibus et striis concentricis decussata ; apice acutâ, valdè incurvatâ : apertura ovato-rotundata. Long. $\frac{1}{5}$, lat. $\frac{3}{20}$, alt. $\frac{1}{10}$ poll. *Hab.* Mountain streams, Madeira.

Closely resembles A. *fluviatilis*, and probably still more A. *radiatus*, Guilding.

Dombeya fasciata. Testa ovata, tenuis, ferrugineo-virens, fusco spiraliter fasciata, creberrimè plicato-striata et lineis volventibus minimis decussata; spira acuta; anfr. 6 ventricosis; sutura pallida, marginata: apertura semilunaris; columella alba, plicâ acutâ instructa. Long. $\frac{3}{4}$, lat. $\frac{3}{8}$ poll. *Hab.* River Concon, Chili.

Allied to *Chilina fluctuosa*, D'Orb., but is more regular in form, more ventricose and more solid; and is noted for its very minute revolving lines, its bands, and its pale suture.

Dombeya obovata. Testa obovata, solidula, pallidè olivacea, longitudinaliter colore saturatiori fulguratim virgata: spira curta, anfr. 6, convexis, ultimo magno, antrorsum attenuato, posticè sub-angulato: apertura magna, elongato-ovata; columellâ albâ, sub-rectâ, benè plicatâ: interior livescens. Long. $\frac{7}{8}$, lat. $\frac{1}{2}$ poll. *Hab.* Concon River, Chili.

In size and marking it is similar to C. *major*, Gray, but is less broad, and the suture much less impressed. It is much larger and more ventricose posteriorly than C. *pulchra*, D'Orb., and much less pictured.

Limnea volutata. Testa parva, tenuissimè striata, fulva, cylindraceo-ovata: spira decollata; anfr. 2-3 superstitibus, obliquis, convexiusculis; suturâ modicâ: apertura ovata, dimidiam testæ superans; columellâ rufâ, valdé sinuatâ. Long. $\frac{3}{10}$, lat. $\frac{1}{5}$ poll. *Hab.* Oahu.

Much smaller than L. *Oahuensis*, Souleyet, and with less tumid whorls, sloping gently to the suture. The somewhat cylindrical aspect of the shell is peculiar.

Limnea lepida. Testa gracilis, elongata-conica, fragilis, dilutè cornea, striis volventibus remotis et striis incrementalibus undulosis decussata: spira acuminata; anfr. 5 obliquis, convexiusculis: apertura magna, semilunaris, expansa; plicâ columellari pernotabili, acutâ. Long. $\frac{3}{5}$, lat. $\frac{1}{4}$ poll. *Hab.* Lake Vancouver, Oregon.

Allied to L. *pallida*, Adams, but is more delicate, more acutely pointed, the aperture much larger, the lip expanded, and the surface peculiarly decussated. The whorls are much more oblique and less rounded than in L. *desidiosa*.

PLANORBIS OPERCULARIS. Testa parva, valdè depressa, castanea, supra planulata; apice depressâ: subtus convexa, latè umbilicata, ad peripheriam marginata et obtusè carinata; spira anfr. 4, suturâ benè impressâ sejunctis; apertura transversa, subrhomboidea. Long. $\frac{1}{4}$, lat. $\frac{1}{16}$ poll. *Hab.* Rio Sacramento, Upper California.

Resembles P. *exacutus*, Say, but is larger, less compressed and less delicate; and the periphery instead of being acutely edged, has a blunted keel like P. *carinatus*.

PLANORBIS VERMICULARIS. Testa parva, fornicata: spira planulata, apice depresso, anfr. 4, cylindraceis, ultimo propè aperturam deflexo; subtus concava; apertura perobliqua, elliptica. Lat. $\frac{1}{5}$, alt. $\frac{1}{15}$ poll. *Hab.* Interior of Oregon.

About the size and form of P. *deflectus*, Say, but is less depressed, the whorls more cylindrical, and not compressed at the periphery.

M. P. Wilder was nominated for election as a member of the Society, by C. K. Dillaway.

ADDITIONS TO THE LIBRARY.

Twenty-sixth Annual Report of New York Mercantile Library Association. 8vo. pamph. 1847. *From the Association.*

American Journal of Agriculture and Science, for February, 1847. *From the Editors.*

W. C. Redfield, on Hurricanes and Northers. 8vo. pamphlet, New Haven, 1846. *From the Author.*

Annals and Magazine of Natural History. No. 124; for February, 1847. *Courtis Fund.*

Gray's Genera of Birds. Part 34. *Audubon Fund.*

Calcutta Journal of Natural History. Nos. 13, 14, 16. 8vo. 1843–4. *Editors.*

Dana, James D., Geological Results of the Earth's Contraction in consequence of cooling. 8vo. pamph. New Haven, 1847. *Author.*

Silliman's American Journal of Science and Arts. No. 8, 2d Series. 8vo. New Haven, 1847.

March 17, 1847.

Dr. C. T. Jackson, Vice President, in the Chair.

Dr. Cabot exhibited a Sternum and Trachæa of *Cygnus Americanus*, showing the curvatures and reduplication of the latter organ within the Sternum, probably having some connection with the voice.

Dr. Cabot remarked that he had noticed, in dissections of Waders and Swimming Birds, the remnant of the vitelline duct. He suggested whether this fact might not be made use of as a distinctive character in classification.

Mr. Stodder reported upon some pamphlets of Mr. J. D. Dana, on the formation of Continents, and on Lunar Volcanoes. He thought the inferences drawn by the author from the appearances of the Moon's volcanoes, and applied to the phenomena of the structure of the Earth, were ingenious, and his hypotheses hard to be refuted; yet equally difficult to be proved.

Dr. C. T. Jackson gave an account of the Tertiary of Maine, stretching along its coast from Lubec to Portland. It is rich in remains of *Pecten Islandicus*, *Buccinum undatum*, *Mytilus edulis*, and other shells, of which specimens were exhibited.

Dr. Wyman spoke of a mass of Lignite, from the Tertiary of Richmond, Va., which, as first found, was soft and friable, so that a blunt stick might be thrust into its substance. But after a few hours exposure to the atmosphere, it hardened and exhibited a conchoidal fracture resembling that of coal. It was embedded in a blue clay, mixed with sand.

Dr. Storer read a letter from F. B. E. Browne, M. D., of Apalachicola, Fa., accompanying two specimens of *Amphiuma means*, and giving some account of its habits and ap-

pearance. The specimen itself was not yet received. Dr. Storer proposed a vote of thanks to Dr. F. B. E. Browne for this donation, and to Dr. A. W. Chapman, of Apalachicola, Fa., for a package of plants of that region, presented at a late meeting. Voted accordingly.

Dr. Gould read descriptions of the following species of Physa, from the Collection of the Exploring Expedition.

Physa tabulata. Testa ovata, sub-solida, impolita, fuliginosa; spira anfr. 4-5 ventricosis, supernè angulato-carinatis, latè tabulatis : apertura elliptica, dimidiam testæ longitudinis superans; columella albidâ, vix plicatâ ; fauce fusco-castaneo. Long. $\frac{7}{10}$, lat. $\frac{4}{10}$ poll. *Hab.* New Zealand.

Not to be mistaken for any other species. It is very much more angular than P. *ancillaria*, and the keel upon the angle, when closely examined, is found to be minutely crenu'ated. P. *variabilis*, Gray, has the lower instead of the upper part of the whorl angular and keeled.

Physa gibbosa. Testa obovata, tenuis, glabrata, luteo-cornea : spira acuminata, anfr. 5 rotundatis, ultimo posticè valdè gibboso, anticè attenuato ; apertura angusta, subovalis, trientes duæ longitudinis adequans ; columellâ sinuatâ, callo indutâ. Long. $\frac{5}{8}$, lat. $\frac{3}{8}$ poll. *Hab.* New South Wales.

The resemblance to P. *ancillaria*, in the younger specimens, is very striking ; the older ones are more like P. *tabulata*, but the last whorl is merely gibbous and not angular. P. *Novæ Hollandiæ* is somewhat similar, but is much more elongated, and neither angular nor gibbous.

Physa sinuata. Testa parva, ovata, cornea, arcuatim striata: spira acuta; anfr. 5 rotundatis posticè sub-angulatis ; suturâ profundâ : apertura obovata, angusta, anticè sub-effusa, posticè emarginata ; labro antrorsum arcuato ; columellâ incrassatâ, subperforatâ, reflexâ. Long. $\frac{1}{2}$, lat. $\frac{1}{4}$ poll. *Hab.* Feejee Islands.

Remarkable for its thickened inner lip, and for the advancing outer lip and consequent posterior sinus and arched striæ of growth, found in no other species except P. *gibbosa.*

Physa reticulata. Testa tenuis, elongata, ovato-conica, fulva,

striis subtilissimis decussata : spira anfr. 4-5 ventricosis ; suturâ per-profundâ : apertura obovata, dimidiam testæ longitudinis vix superans; columellâ rufâ, valdè plicatâ. Long. $\frac{7}{10}$, lat. $\frac{7}{20}$ poll. ; of another, long. $\frac{1}{2}$, lat. $\frac{1}{4}$ poll. *Hab.* Sandwich Islands.

Remarkable for its general color, the color of the pillar lip, its decussated surface, and its very tumid whorls. Its form is so much like that of a reversed Limnea, that I am strongly inclined to believe it to be one. Probably the *Limnea Oahuensis*, Souleyet, (Voy. de la Bonite,) is the same ; but unfortunately the animal there given is so indefinitely figured as to leave it doubtful whether it is really a Limnea or a Physa.

Physa virginea. Testa elongato-ovata, tenuis, fragilis, lucida, nitida, alba : spira acuta, anfr. 5 convexis, posticè subangulatis : apertura elongata, obovata, posticè acuta ; columella leviter plicata. Long. $\frac{3}{5}$, lat. $\frac{5}{16}$ poll. *Hab.* Rio Sacramento, California.

The porcelain-like structure and color of the specimens seems not to be merely the effect of bleaching. It is one of the most elongated species, but less slender than P. *hypnorum* and more like P. *gyrina* or P. *rivalis* in form, but is a far more delicate shell.

Physa venustula. Testa parva, ovata, pellucida, nitida, dilutè cornea : spira elevata, anfr. 5 ventricosis, posticè subangulatis : apertura ovata ; columellâ validâ, albidâ, valdè sinuatâ. Long. $\frac{3}{10}$, lat. $\frac{9}{20}$ poll. *Hab.* Lima.

Closely resembles small specimens of P. *heterostropha*, though in size and texture it is like P. *fontinalis*, which has a much shorter spire.

Messrs. Edward Phillips and Marshall P. Wilder were elected members of the Society.

ADDITIONS TO THE LIBRARY.

Audubon and Bachman. Quadrupeds of North America. Plates, 101–105. Folio. *Subscribers.*

S. G. Morton. Hybridity in Animals and Plants. 8vo. pam. New Haven, 1847. *Author.*

Transactions of Massachusetts Horticultural Society, for 1843–6. 8vo. pam. Boston. *The Society.*

March 24, 1847.

Dr. C. T. Jackson, Vice President, in the Chair.

The Vice President stated that this special meeting had been called on account of the melancholy event, the tidings of which had been received by the last steamer from England, the death of our late President, Amos Binney, Esq.

Dr. Storer moved the following resolution:

Resolved, That the unexpected tidings of the death of our much-valued friend, Amos Binney, Esq., late President of this Society, fill us with inexpressible sorrow. To us we feel that his loss is irreparable. One of the founders of this Society, he was ever its most steady, devoted, true friend; constantly evincing his interest by suggesting new plans for its advancement; constantly proving his sincerity by endeavors to perfect them. To his encouragement, decision, perseverance, we owe, in no slight degree, our present prosperous condition. With full hearts we would acknowledge our obligations, while we gratefully cherish his memory.

Prof. Asa Gray offered the following resolution:

Resolved, That the Council be requested to prepare, or cause to be prepared, by such member of the Society as they may designate for that purpose, a sketch of the life and scientific labors of our late lamented President, to be read before the Society and published in its Journal, or in such other manner as the Society may direct.

Mr. E. S. Dixwell offered the following resolution:

Resolved, That we deeply sympathize with the family of the deceased, in their present great affliction; and that the Secretary be directed to communicate to them an attested copy of the foregoing resolutions.

The foregoing resolutions being severally proposed to the meeting, were unanimously adopted.

Dr. A. A. Gould was chosen to prepare a Memoir, agreeably to the second Resolution.

April 7, 1847.

Dr. C. T. Jackson, Vice President, in the Chair.

Dr. Cabot, in behalf of the Committee on the subject of procuring a suitable edifice for the Society, reported that the building in Mason Street, known as the Massachusetts Medical College, was now for sale at a reasonable price, and that the Committee, after a thorough examination of it, were of opinion that it was capable of being adapted perfectly to the wants of the Society. They therefore recommend that it be purchased and undergo the necessary repairs and alterations, for the Society. Plans of the proposed improvements were exhibited.

After discussion, Mr. Emerson moved that the Committee have authority to make the purchase, and cause the proposed alterations to be made. It was voted unanimously.

Dr. C. T. Jackson gave notices of some analyses of Snow, which fell in Boston, in the last month, made by one of his pupils, Mr. George O. Barnes. The object was to ascertain the quantity of Ammonia brought down from the atmosphere by the snow, which, as coming from a region immediately over a large city, might be expected to exhibit a larger quantity than was found by Liebig in his analyses of snow at Giessen. The result was according to expectation, the quantity, in 100 grains of water, being 1.33 gr. to 1.44 gr. in different experiments.

Mr. Desor, in reference to the analyses of Snow, made some remarks.

The existence of Ammonia in snow, both in the glacial and the higher mountain snows, had been inferred, many years ago, from the fact that several iron vessels and tools, which had been left during winter in the snow, were found the next spring free from rust. Accurate analyses have since been made by Mr.

Horsford, in the laboratory of Prof. Liebig, who found a much less proportion than Dr. Jackson, $\frac{1}{10000000}$ of weight. M. Desor observed that it was very difficult to account for the presence of Ammonia from the presence of the Infusoria in red snow, and of the minute Podurellæ (*Desoria glacialis*), though so abundant.

Dr. C. T. Jackson exhibited beautiful Crystals, formed in a mass of cinders, which had lain undisturbed for some years, at the copper-works at Point Shirley. They proved, on analysis, to be a bi-sulphat of copper and zinc.

Dr. C. T. Jackson described an interesting experiment of Mr. Blake at the Gas-works.

He placed a mass of compact felspar in a crucible, hermetically sealed, in a furnace flue at the gas-works, where it was exposed for 108 hours to a uniform temperature considerably below the degree necessary for the fusion of the mineral. On being taken out, it was found to be perfectly limpid, and transparent as quartz; showing that long-continued heat, though not to a degree sufficient to melt the mineral, produces effects similar to those produced by fusion.

Dr. Gould described new Shells, received from Rev. Mr. Mason, of Burmah, several of which had been furnished by the lady of one of his associates, Mrs. Vinton. He repeated a remark, formerly made, that the forms of land and fresh water shells from our antipodes, bore a striking resemblance to those of our own country; while those from intermediate regions are quite dissimilar. The shells now received give additional confirmation of the fact.

Helix anguina. Testâ sinistrorsâ, distortâ, planorboideâ, glabrâ, fusco-castaneâ; infra radiatim flammulatâ, vix concavâ; spirâ planulatâ, anfr. $5\frac{1}{2}$ convexiusculis, ultimo ad peripheriam sub-angulato; aperturâ despectâ, per-obliquâ, semi-ellipticâ, peristomate rufo, revoluto, callo angulato haud appresso, conjuncto; lamellâ albâ secundum anfractum penultimum intro-volvente. Diam. 1, alt. $\frac{1}{4}$ poll. *Hab.* Manko, near Newville, Province of Tavoy. Presented by Mrs. Vinton.

Another curious reversed, planorboid shell, like H. *refuga*,

p. 72, from the same region. It is larger, less concave, and peculiarly colored, like *Steganotoma pictum*, Troschel.

Melania pagodula. Testâ crassâ, sub-rhombeâ, turritâ, tenuiter striatâ, fusco castaneâ, decollatâ; spirâ elevatâ, conicâ, anfr. 4, angulatis, angulo spinis 6 robustis armato; ultimo anticè sub-rostrato, et costulis ad 4 cincto: aperturâ ovatâ, antrorsum productâ, fauce cærulescente, fusco maculato. Long. $1\frac{1}{2}$, lat. $\frac{7}{8}$ poll. *Hab.* Thoungyin River, a branch of the Salwen. Presented by Mrs. Vinton.

This remarkable shell is almost precisely like M. *armigera* in its structure and proportions, but is three times as large, something like *Io spinosa*.

Melania baccata. Testâ magnâ, crassâ, elongato-turritâ, epidermide fusco-castaneo indutâ; spirâ decollatâ, anfr. 6 rotundatis, plicis longitudinalibus et costis volventibus triseriatim nodoso-decussatis, ultimo ad basim 4 costato; aperturâ lunatâ, labio anticè producto, columellâ aurantiâ valdè arcuatâ; fauce cœrulescente fusco fasciato. Long. 2, lat. $\frac{3}{4}$ poll. *Hab.* Thoungyin River. Presented by Mrs. Vinton.

Closely allied to M. *inquinata*, but it is distinguished by its ranges of prominent pustular knobs and its orange columella.

Melania humerosa. Testâ elongato-turrita simplex, viridicorneâ; spirâ derosâ, anfr. ad 8 convexis, propè suturam obsoletè angulatis, lineis tenuissimis spiraliter striatis, ultimo anticè costato-striato; aperturâ sub-ovali, anticè vix effusâ; columellâ rotundatâ, albâ, fauce fasciatim sub-livida. Long. $1\frac{7}{8}$, lat. $\frac{1}{2}$ poll. *Hab.* Manko, Tavoy. Presented by Mrs. Vinton.

Allied to M. *Virginica* in size and form, though somewhat more conical and robust, and with angular whorls. It still more nearly resembles M. *intermedia*, of Von den Busch.

Melania fluctuosa. Testâ parvâ, elongata, sub-cylindricâ, fulvo-corneâ, longitudinaliter plicatâ, plicis 8-10 compressis, acutis, fuscescentibus: anfr. ad 6 (apice derosâ) vix convexis, suturâ haud impressâ; aperturâ parvâ, ovatâ, vix effusâ. Long. $\frac{3}{5}$, lat. $\frac{1}{4}$ poll. *Hab.* Newville, Tavoy. Presented by Mrs. Vinton.

Allied to M. *plicifera*, Lea, but is smaller, more cylindrical,

with the plaits extending to the base, and destitute of the coarse revolving lines.

NERITINA CAPILLULATA. Testâ conico-globosâ, ad peripheriam subangulatâ, fusco-viridi, interdum fasciatâ, lineolis capillaceis fuscis acutè angulatis reticulatâ; spirâ obtusissimâ, anfr. 2, ultimo propè suturam obstricto; aperturâ obliquè semicirculari, virescente, labro tumido, columellâ arcuatâ, obtusâ, edentulâ, striolatâ. Long. $\frac{3}{8}$, lat. $\frac{1}{2}$ poll. *Hab.* Tavoy.

Much like N. *ziczac*, but much smaller and of a paler green; the aperture is much lighter colored, and the zigzag lines are exceedingly delicate and very acutely angular, not being distinctly visible except in young specimens. It must be very much like N. *flavovirens*, Von den Busch.

NERITA ARTICULATA. Testâ obliquè semiglobosâ, posticè planulatâ, anticè dilatatâ; spirâ prominulâ, anfr. 3, liris prominulis atro-purpureis, albo articulatis 25-30 cinctis, interspatiis latioribus lucidis carneolis decussatim striatis: aperturâ magnâ semilunari, labro acuto atropurpureo, callo albo creberrimè sulcato firmato; fauce luteo; labio excavato, extrorsum plicato; columellâ acutâ, sinuatâ, denticulis 3-4 armatâ. Diam. $\frac{7}{8}$, alt. $\frac{1}{2}$ poll. *Hab.* Tavoy.

Much like M. *lineata*, but a little more oblique and less globular; the girdling threads are less numerous, less in relief, and distantly articulated with white; color more flesh-like; grooves on labrum more numerous, 25-30; spire a little protruded.

NEMATURA PUNCTICULATA. Testâ minutâ, subrhombeâ, compressâ, solidâ, nitidâ, pallidè virescente, omnino sub lente punctículis serialibus insculptâ; spirâ elevatâ, anfr. 5 convexis, ultimo permagno, versus aperturam valdè contracto; aperturâ parvâ, dispari, rotundato-ellipticâ, tubuliformi; labro simplici, crasso, continuo. Long. $\frac{1}{4}$, diam. $\frac{1}{7}$ & $\frac{1}{8}$ poll. *Hab.* Tavoy. Presented by Mrs. Vinton.

About the size and shape of N. *deltæ*, Benson, but the aperture is much more distorted, there is no approach to an umbilicus, and its punctured surface is sufficiently distinctive.

UNIO GENEROSUS. Testâ magnâ, solidâ, transversâ, oblongo-ovatâ, inequilaterali, anticè rotundatâ et angustatâ; posticè obli-

quatâ, subrostratâ, ad apicem truncatâ ; margine ventrali arcuatâ, dorsali rectâ, adscendente ; umbonibus contiguis haud elevatis ; valvis sub-tumidis radiatim substriatis, posticè sub-costatis, epidermide fuliginosâ, disco nitido : dentibus remotis ; cardinalibus elongatis, obliquis, laminatis : margaritâ albâ vel salmonaceâ, limbo iridescente. Long. $3\frac{3}{4}$, lat. $1\frac{1}{2}$, alt. $2\frac{1}{2}$ poll. *Hab.* Newville, Tavoy. Mrs. Vinton.

The general form, convexity and color is that of *Anod. Vondenbuschiana*, Lea, though the largest specimens are more arcuated at base, and the younger ones are more oblong, like U. *complanatus*. The cardinal teeth are like those of U. *marginalis*, a more cylindrical shell, but they are still more elongated.

Dr. Gould offered the following resolution :

Resolved, In token of the respect in which we hold the memory of our late President, for his private worth, his scientific attainments, his labors for the promotion of science generally, and more especially for his long and sincere devotion to the interests of this Society from its origin until his decease ; that his son, Amos Binney, who so strikingly bears the image, and who, we trust, inherits the virtues and the tastes of his father, be hereby invited to attend the meetings of the Society, and to share with members the privileges of the Library and Cabinet.

Voted, unanimously.

Dr. Gay, in behalf of the Committee raised at the last Annual meeting to consider the subject of postponing the time of the Annual Address, reported a recommendation, that the third Wednesday of May, being the next meeting after the Annual meeting, be assigned for that purpose.

It was so voted.

A Committee for the nomination of Officers for the next year, was chosen, consisting of Mr. Bouvé, and Drs. Bacon and Gould.

The Finance Committee were instructed to take measures, if necessary, for the increase of the power, granted by the charter of the Society, to hold real estate ; and it was

Voted, that the First Vice President be placed on that Committee in lieu of the President, deceased.

Dr. Gay announced the donation, by Francis Alger, Esq. of two hundred specimens of Minerals, to be selected from his Cabinet by the Curator of Mineralogy.

April 21, 1847.

Dr. Cabot in the Chair.

Dr. Gould read descriptions of the following species of Melania, from the Collection of the Exploring Expedition.

Melania Cybele. Testa ovata, turrita, crassa, fuliginosa, epidermide velutinâ induta; spira ad apicem valdè erosa, anfr. superstit. ad 3 planulatis, supernè tabulatis, et pinnis curtis acutis arrectis ordinatim dispositis, coronatis: apertura angusta, elongato-ovalis, posticè angulata; intus livida. Long. 1, lat. $\frac{5}{8}$ poll. *Hab.* Feejees, Navigators, &c.

Probably confounded with M. *amarula*. That shell is lighter colored, shorter, smoother and destitute of the velvety epidermis: the spines are less numerous, longer and sharper and stand out somewhat from a vertical position: in this species they resemble mural battlements.

Melania tetrica. Testa oblonga, turrita, ponderosa, fusca, liris paucis cincta: spira truncata, anfr. superstitibus 3-4 convexiusculis, posticè sub-angulatis et spinis validis acutis 5 ad basim decurrentibus armatis, interdum muticis: sutura profunda: apertura arctè elliptica; intus livida. Long. $1\frac{1}{4}$, lat. $\frac{5}{8}$ poll. *Hab.* Feejee Islands.

More slender than the preceding, and with more convex whorls. It has nearly the same form as M. *bellicosa*, Hinds, but is larger and has fewer spines. It is especially distinguished by its few stout spines directed outwards.

Melania Terpsichore. Testa elongato-turrita, solidula, olivacea, plagis flexuosis fuscis picta, longitudinaliter creberrimè

plicata, et liris elevatis versus basim crescentibus cincta : spira elevata, ad apicem erosa, anfr. 4 posticè subangulatis : apertura angusta, elliptica, testæ longitudinis trientem adequans ; intus cœrulescens. Long. 1, lat. $\frac{2}{3}$ poll. *Hab.* Feejee and Samoa Islands.

Of the same group as the preceding, but more slender, and remarkable for the lyrate appearance produced by its numerous folds, decussated by revolving lines, one of which, more conspicuous than the rest, forms a sort of beaded angle.

Melania corolla. Testa parva, ovato-conica, fusca : spira acuta, anfr. ad 6 ventricosis, posticè constrictis, angulo submediano aculeos numerosos ordinatim radiantes gerente, instructis ; suturâ haud impressâ : apertura rotundata ; labiis continuis. Lat. $\frac{2}{10}$, alt. $\frac{3}{10}$ poll. *Hab.* Banks' Peninsula, New Zealand.

This beautiful little shell, somewhat resembling M. *spinulosa*, is readily recognized by its coronets of numerous small radiating prickles on the angles of the whorls.

Melania lutosa. Testa crassa, elongato-turrita, striis tenuibus cincta, fusco-castanea, et crustâ lævi, lutosâ, crassâ, rubiginosâ, omnino obtecta : spira anfr. 7 superstitibus convexis ; suturâ profundâ : apertura obovata, vix effusa, peristomate rufo limbato ; fauce livido : operculum crassum, osseum, subspirale. Lat. $\frac{1}{2}$, alt. $1\frac{3}{4}$ poll. *Hab.* Upolu.

This simple and graceful shell, resembling in form M. *Virginica* or M. *decollata*, is easily distinguished by the dark brown margin of the aperture. It is remarkable for the thick crust of mud with which it is covered, and which is so smooth and brown externally, as to seem like the natural surface of the shell. A glance at the tip reveals its real nature.

Melania corporosa. Testa subulato-conica, decollata, nitida, olivaceo-castanea, juxta suturam cerina, striis plerumque minimis decussata : spira anfr. ad 5 convexiusculis ; suturâ profundâ et marginatâ : apertura angusta, pyriformis, anticè vix producta ; intus livida ; columellâ albidâ. Long. $1\frac{1}{2}$, lat. $\frac{1}{2}$ poll. *Hab.* Taheiti.

Very nearly the same shape as M. *lutosa*, but is distinguished by its clean, shining, minutely reticulated surface, its pale sutural region, and its narrower aperture, destitute of the deep brown limbus.

Melania Scipio. Testa magna, solida, lanceolata, truncata, picea, sursum rufescens et flammulis longitudinalibus fuscis magis ac magis picta (juvenibus valdè subulatis et epidermide tomentoso quoque indutis) creberrimè et minutissimè decussato-striata : spira anfr. superstitibus 4-5 (integris 12-15) planulatis, obliquis ; suturâ impressâ et marginatâ : apertura triangularis, valdè effusa, posticè sub-canaliculata ; regione columellari tumido ; columellâ planulatâ, acutâ, albâ : intus plumbea. Long. $1\frac{1}{2}$, (integer 3) lat. $\frac{1}{2}$ poll. *Hab.* Samoa and Feejee Islands.

About the size and form of M. *funiculus*, Quoy, but has a longer and more acute aperture. M. *aspirans*, Hinds, is still larger and more solid, less convex whorls, a darker and less variegated surface. Besides its dark pitchy color changing towards the tip to flammulated fawn color covered by a velvety epidermis, it may be known by its minute, close set revolving lines.

Melania Vainafa. Testa elongato-conica, lævis, badia (junioribus herbaceis et lineolis flexuosis fuscis pictis) : spira decollata, anfr. 4-5 superstitibus, subplanulatis, ultimo plerumque striis distantibus cincto ; suturâ marginatâ : apertura ovata, testæ quadrantem æquans. Long. $\frac{7}{8}$, lat. $\frac{3}{10}$ poll. *Hab.* Falls of Vainafa, Upolu.

It has the form and general color of small, smooth specimens of M. *Virginica*, but the whorls are more flattened, and the front of the aperture is more rounded.

Melania scitula. Testa gracilis, elongato-conica, decollata, epidermide piceo induta : spira anfr. superstitibus ad 5 valdè convexis, supernis longitudinaliter plicatis, infernis spiraliter liratis, præcipuè juxta suturam et ad basim : apertura obovata, quadrantem testæ haud aquans, anticè aliquanto producta ; fauce livido. Long. $\frac{7}{8}$, lat. $\frac{1}{4}$ poll. *Hab.* Upolu.

It has the form and size of M. *abjecta*, Hald., from Alabama, also of M. *truncatula*, Lam. It is more robust, paler, and the folds are more prominent and on more whorls than in M. *plicata*, Lea.

Melania silicula. Testa parva, gracilis, sub-cylindrica, truncata, epidermide fusco-castaneo induta : spira anfr. ad 4 superstitibus, rotundatis, spiraliter liratis, supernis longitudinaliter pli-

catis; ultimo fusco-zonato; suturâ benè impressâ; apertura rotundato-ovata, anticè vix producta; fauce subviolaceo. Long. $\frac{1}{2}$, lat. $\frac{1}{5}$ poll. *Hab.* Nisqually, Oregon.

Very much like the preceding, but considerably smaller, more cylindrical, the whorls more plaited, and a band on the basal one. It resembles M. *proxima*, Say, which is less cylindrical and without folds.

Melania bulbosa. Testa parva, conico-oblonga, nitida, decollata, fusco-viridis: spira anfr. superstitibus 2-3 rotundis; suturâ profundâ: apertura ovato-rotundata, vix effusa. Long. $\frac{1}{2}$, lat. $\frac{9}{20}$ poll. *Hab.* Columbia River.

The whorls are very cylindrical, so as to appear like a succession of bulbs. It is much like M. *perfusca*, Anthony; but in that the whorls slope gently to the suture. A broken specimen shows that it often attains a considerable size.

Melania furfurosa. Testa turrita, ovato-pyramidata, tenuis, scabriuscula, dilutè fulva, et propè suturam fusco maculata, striis arcuatis incrementalibus et striis volventibus tenuissimis decussata: spira integra, anfr. 7 rotundatis, confertis, supernè sub-tabulatis; ultimo magno, ventricoso; supernis obliquè plicatis: apertura lunata, ad columellam effusa. Long. $\frac{3}{4}$, lat. $\frac{3}{8}$ poll. *Hab.* Manila.

Allied to M. *scabra*, which is more elongated, and its whorls much less cylindrical, its striæ coarse and distant, and crowned with spino-tubercles.

Melanopsis Zelandica. Testa solida, ovato-conica, nitida, olivacea, fusco-trifasciata: spira conica, brevis, acuta; anfr. 3, supernis planulatis et ad suturam confluentibus; ultimo magno, posticè planulato, anticè ventricoso: apertura elliptica, cœrulescens, rufo-fasciata, posticè in canalem obducta; labro acuto: columella valdè arcuata et excavata, posticè callo tuberculoso copioso instructa. Long. $\frac{9}{10}$, lat. $\frac{9}{20}$ poll. - *Hab.* New Zealand.

Compared with M. *prærosa*, Lin., it is more plump, has but 3 instead of 6 or 7 whorls, the aperture proportionally longer: the columella remarkably arched; and the surface and aperture are banded with dark chestnut.

Dr. Wyman remarked, in reference to the Podura, found in the Alpine snows, mentioned at the last meeting, that a friend informed him that he had observed an insect in the snow in this State, known to the common people under the name of "Snow-flea."

Dr. Wyman exhibited fossil Teeth, from the Tertiary of Virginia, of *Carcharias megalodon.*

Dr. Gould mentioned, that he had observed, in turning over Jardine's Naturalist's Library, that the Moose, which Mr. Agassiz has lately distinguished from the European species by the name of C. *lobatus*, was already distinguished by Richardson as C. *Americanus.*

Dr. Cabot mentioned, that he had lately found a specimen of Anas discors, in market, in full plumage. He had never before met with one at this season, and believed them very rare in this region. Mr. J. Eliot Cabot remarked that these birds move to the South by the sea-coast, but return by some other route. They breed along the great lakes and the coast of Maine.

Mr. Emerson, in behalf of the Committee on Finance, reported that on examination of the Charter of the Society, it did not seem necessary to ask for increased power to hold property, in consequence of the contemplated purchase of a building. It was believed the powers already granted by the charter were ample for the purpose.

A letter of condolence, on the lamented death of our late President, addressed to the Society, by the Academy of Natural Sciences of Philadelphia, was read, and committed to the Corresponding Secretary.

Drs. Abbot and Bigelow were chosen a Committee to make arrangements for the Annual Meeting.

Rev. Theodore Parker was nominated for membership by Mr. J. Eliot Cabot.

ADDITIONS TO THE LIBRARY.

Gray's Genera of Birds. Part 35, long 4to. London, 1847. *Audubon Fund.*

Annals and Magazine of Natural History. No. 125. 8vo. London, 1847. *Courtis Fund.*

Magazine of Horticulture. No. 148. 8vo. Boston, 1847. *C. M. Hovey, Editor.*

Annals of the Lyceum of Natural History of New York. Vol. IV. Nos. 8, 9. 8vo. New York, 1847. *Lyceum.*

Transactions of the American Philosophical Society. Vol. IX. Part 3. 4to. Philadelphia, 1847. *The Society.*

The Magazine of Horticulture, and Report of Agricultural Society, were committed to Mr. Teschemacher.

The Transactions of the American Philosophical Society were committed to Dr. Bacon;

Lyceum of Natural History of New York, to Dr. Wyman.

May 5, 1847.

ANNUAL MEETING.

Dr. C. T. Jackson, Vice President, in the Chair.

Reports of Curators were handed in; and, on motion, the reading of them was postponed to the next meeting.

The Committee for the nomination of Officers for the ensuing year reported, and the Society proceeded to the election, which resulted in the choice of the following gentlemen.

President,
John Collins Warren, M. D.

Vice Presidents,
Charles T. Jackson, M. D. D. Humphreys Storer, M. D.

Corresponding Secretary,
Augustus A. Gould, M. D.

Recording Secretary,
Thomas Bulfinch.

Treasurer,
Patrick T. Jackson, Jr.

Curators,

T. William Harris, M. D.	*Of Entomology.*
J. E. Teschemacher,	*Botany.*
Martin Gay, M. D.	*Mineralogy.*
Jeffries Wyman, M. D.	*Icthyology and Herpetology.*
N. B. Shurtleff, M. D.	*Comparative Anatomy.*
Thomas T. Bouvé,	*Geology.*
Samuel Cabot, Jr., M. D.	*Ornithology.*
John Bacon, Jr., M. D.	*Conchology.*

Librarian,
Charles K. Dillaway.

Cabinet Keeper,
Samuel Kneeland, Jr., M. D.

Prof. C. B. Adams presented a Synopsis of five species of Shells from Jamaica, supposed to be new. They were Triton parvus, Cerithium gemmulosum, Lucina ornata, L. subglobosa, L. pectinata.

Prof. A. also submitted "Corrections of the Nomenclature of some species of Shells."

Prof. A. presented two Aculei of large size. He stated that they were from an exogenous tree, whose botanical name was unknown to him, but which was called by the country people "Prickly Yellow." The thorns were an elongation of the cuticle, and easily knocked off.

Mr. Bouvé nominated Charles J. Sprague for election into the Society.

Rev. Theodore Parker was elected a member of the Society.

May 19, 1847.

The President in the Chair.

The Annual Address having been assigned for this day, a numerous and respectable audience of members and friends of the Society were in attendance.

The Reports of Curators were presented and read by Dr. Storer, Vice President; an abstract of which follows.

The Curator of *Botany* reports, That the additions to the Botanical Collection of the Society are confined to a small, but excellent Herbarium of Plants, collected in the vicinity of Apalachicola, containing several rare and beautiful species, viz. Bletia aphylla, Aceratus viridis, four species of Sarracenia, Tarrega taxifolia, an undescribed Gerardia, and an undescribed Justicia, &c.

The Curator of *Comparative Anatomy* reports, That his department of the Cabinet continues to be increased by the addition of new specimens, both from foreign and domestic sources; particular mention of which will be found in the printed Proceedings of the Society.

The Curator, in anticipation of the labor necessarily attendant on the removal of the Collection to a new hall, which it is hoped may be accomplished before another Annual Meeting, calls on those who have heretofore labored in this department, to renew their efforts; and invites other and younger coadjutors to lend their aid.

The Curator of *Icthyology* and *Herpetology* reports, That in consequence of the insufficiency of room in the Society's Hall, no changes have been practicable in the general arrangement of the Specimens belonging to these departments; and that, as in years past, a large number of valuable specimens, especially of Reptiles, are still necessarily withheld from public exhibition.

Valuable additions have been made to the Cabinet during the past year, for which the Society is more especially indebted to

the Rev. Mr. Mason of Burmah, and to Dr. F. W. Cragin of Surinam ; especially to the latter gentleman, who has continued to be, as for several years past, one of our most liberal benefactors.

The Curator of *Mineralogy* reports that the Cabinet of Minerals has been increased by only a few specimens. There are some specimens of Copper, that have not been particularly noticed before, and a beautiful specimen of Oxide of Tin. A donation of two hundred specimens has been promised by Mr. F. Alger, and they will be selected by the Curator as soon as a place shall be ready for them in the new building. Other donations have been promised to be made to the Society at the same time.

The Curator of *Ornithology* reports, That the present state of the Collection belonging to his department is one of safety at least, if not of usefulness ; that is to say, with the exception of about one-third, displayed in the glass cases, our Collection of Birds is, after having been thoroughly baked and poisoned, carefully sealed up and stowed away in the garret, for want of more fitting accommodations. To preserve them from the Dermestes, which were making most fearful ravages in spite of all previous precautions, including the immersion of each specimen in a strong tincture of corrosive sublimate, as recommended by Waterton ; the Curator resorted to this measure as a temporary expedient. The addition of twenty-seven or twenty-eight specimens from our indefatigable friend, Dr. Cragin of Surinam, has been received the last year. The purchase of eighteen specimens of Cayenne Birds, which are wanting to the Collection, and are now to be procured on reasonable terms, is recommended.

The *Librarian* reports, That he has received, since the last Annual Meeting, twenty-six volumes and seventy-five pamphlets or parts of volumes. Among the most valuable acquisitions, are Gray's Genera of Birds, Milne Edwards's Histoire des Crustacées, Gould's Monograph of the Odontophorinæ, and Owen's History of British Fossil Mammals and Birds. The number of Books received the past year is not so great as that of the preceding year; the value of them, however, is fully equal.

Dr. Storer, Vice President, remarked as follows :

"No one must infer, from these Reports of the Curators, that

any less interest has been felt than in preceding years. They have been as desirous as ever of enriching our Collection, of advancing their favorite departments; but they have been literally compelled, not merely to refuse to receive specimens, which have been offered to them, but also to refrain from arranging those already belonging to the Society, for want of space.

"For several years the insufficiency of our accommodations has been keenly felt by the members of this Society. During the last year, our late much-lamented President determined to make an effort to procure a suitable building to contain our Collections. He commenced his task, and had obtained subscriptions to the amount of several thousand dollars, when his feeble health compelled him to leave for Europe. Since his departure, the effort has been continued by others, and is now in progress, with a fair prospect of success."

Dr. Storer paid a fervent tribute of respect to the memory of the late President, and warmly welcomed his successor to the seat he was now occupying, and pledged the hearty coöperation of his brother members and himself to advance the prosperity and usefulness of the Society.

The President, Dr. Warren, replied, acknowledging the kind welcome given him, and expressing his gratification at the honor conferred upon him by his election to that office.

He remarked, that early in life he had felt deeply interested in Natural History, and would gladly have devoted a large share of his time and powers to its studies, but the particular departments of Anatomy and Surgery, which, at that time, were in a very imperfect state in this country, demanded all his faculties, and it was not till of late years that he had felt that he had any time to bestow on the special branches of Natural Science. He had, however, from the publications of this Society and from intercourse with its members, derived frequent aid in his own studies, and been led to form a high estimate of the usefulness of the Society and of the value of its labors. He promised to give his hearty coöperation with his brothers of the Society in promoting their common objects.

The Address by Dr. A. A. Gould then followed. It was principally occupied with a notice of the Life, Character, and Labors of the late President of the Society, Amos Binney. Remarks on the Study of Natural History followed; and it closed with an account of the effort now being made for procuring a suitable edifice for the Society; congratulating the members on the prospect of their next Annual meeting being held in an edifice better adapted to their wants, and more worthy of their past and future labors.

On motion of Mr. Alger, the thanks of the Society were voted to Dr. Gould, for his interesting and able Address; and the Publishing Committee were directed to request a copy for the press.

The Treasurer's Report was then read, by which it appears that the

Receipts for the last year, including balance from 1846, are	$499 22
Expenditures for the same time . .	499 26
Balance due the Treasurer . . .	4
From the Courtis Fund there has been received, including balance from last year . .	$555 51
Expended	358 26
Balance to credit of Courtis Fund . .	197 25

The Report was committed to a Committee, consisting of B. A. Gould, and Charles C. Sheafe, Esqrs., for examination.

Charles J. Sprague was elected a member of the Society.

Dr. Phelps, of Windsor, Vt., and Dr. Lewis R. Gibbes, of Charleston, S. C., were elected Corresponding Members.

Mr. J. W. Appleton was nominated for election as a member, by Dr. Gould.

Proceedings of Providence Franklin Society. Vol. I. No. 2. 8vo. pamph. Providence, 1847. *P. F. Society.*

Gray's Genera of Birds. Part 36. Long 4to. London, 1847. *Audubon Fund.*

Annals and Magazine of Natural History. No. 126. 8vo. London, 1847. *Courtis Fund.*

N. B. Ward on the Growth of Plants, in closely glazed cases. 8vo. London, 1842. *Author.*

Silliman's American Journal of Science and Arts. No. 9. 2d Series, Vol. III. 8vo. New Haven. *Editors.*

Proceedings of Academy of Natural Sciences of Philadelphia. Vol. III. Nos. 6 and 7. 8vo. pamph. Philadelphia, 1847. *Academy.*

Proceedings of Zoological Society of London. Parts 12, 13, 14. May, 1844, to April, 1846. *Zoological Society.*

Reports of the Council and Auditors of the London Zoological Society, for 1845–6. *Zoological Society.*

Magazine of Horticulture. No. 149. For May, 1847. 8vo. pamph. Boston. *C. M. Hovey, Editor.*

Gray's Genera of Birds. Part 37. Long 4to. London, 1847. *Audubon Fund.*

Annals and Magazine of Natural History. Nos. 127, 128. 8vo. London, 1847. *Courtis Fund.*

May 27, 1847.

A Special Meeting was holden at the house of the President, to take further measures in relation to the procurement of a building.

The President in the Chair.

Voted, That the Treasurer be authorized and directed to collect the moneys which have been subscribed for the purchase of a building for the Society.

Voted, That the Building Committee be authorized to conclude the purchase of the Medical College in Mason Street.

Voted, That said Committee be enlarged by the addition of the Treasurer, and requested to continue their efforts to increase the subscription to the necessary amount.

Voted, That the President, with the Committee, be instructed to prepare a Circular, embodying the facts relating to the subject, and to distribute it among the friends of the Society.

Voted, That the President be authorized and requested to confer with other gentlemen, not members of the Society, and with them to concert measures for the accomplishment of the object in view.

June 2, 1847.

The President in the Chair.

Dr. Wyman exhibited Preparations of the Spines, from the head of the *Lophius Americanus*, Cuv., showing their peculiar mode of articulation, by means of two rings of bone, resembling the links of a chain. The ring belonging to the movable spine is in many specimens made up in part of ligament.

He exhibited a fœtus of the *Acanthias Americanus*, Storer, the vitelline sac being still suspended from the abdomen. He had taken a large number from the oviducts, and found them nearly all in a corresponding stage of development. There were none in an earlier stage, except a few instances where the vitellus only existed in the duct, but the process of development had not commenced. One specimen was captured swimming in the water, with the vitellus still pendent.

Dissections of the fœtal and adult brain were also exhibited, the former contrasting with the latter in having the olfactory lobes in contact with the hemispheres, and these last proportionally much smaller, more oval, and more closely resembling the optic lobes in form and size.

The interior of the oviduct presented a peculiarity which is interesting in connection with the mode of development of the genus. The mucous membrane is thrown into longitudinal folds, and each fold provided with numerous vascular loops, which lying in contact with the vessels on the surface of the vitelline sac, would assist in revivifying the blood of the fœtus, and thus forming an imperfect placenta. Muller has demonstrated the union of the vitellus and the vascular surface in the Emissole, and thus forming a much nearer approach anatomically and physiologically to a true placenta. This peculiarity is in accordance with the view taken by Agassiz and Owen, that the Plagiostome fishes are more nearly allied to the higher vertebrata than they were supposed to be by Cuvier.

The President read a letter from M. Alcide d'Orbigny, acknowledging the receipt of the Society's Proceedings, and announcing the donation of a work of his, now in progress, on French Paleontology, and soliciting contributions of American specimens.

Dr. Storer read a letter from Mr. N. M. Hentz. He announces that he has made several additional discoveries, and has many new descriptions and designs, which will form an Appendix to his paper on Araneides, now publishing in the Journal.

Dr. Storer read an extract of a letter from Dr. F. B. E. Brown, of Apalachicola, Fa., as follows:

"I have the pleasure of forwarding a specimen of the *Ophiosaurus striatulus*, Jointed or Glass Snake, of this country. It is the first one I have ever seen unbroken. In catching them they will often strike with the tail, which will fly off like a pipe-stem. They are quite innocent. Found near low grounds, subsisting chiefly on bugs and worms; are fond of being near rice fields. This was caught and presented to me by my friend, Dr. Chapman."

Dr. Gould, in behalf of Mr. T. J. Whittemore, presented a beautiful shell of *Testudo radiata.*

Dr. G. read a letter from Dr. J. Lawrence Smith, communicating the fact that he is now located at Constantinople, in the employment of the Turkish government, and is desirous of procuring specimens of American Minerals and Fossils, for the purpose of establishing a Cabinet in that city, and offers to reciprocate by the exchange of specimens from that country.

Dr. G. placed on the table a fine Engraving of the late Prof. De Candolle, sent to Prof. Gray, with others, by the son of De Candolle, for distribution as he should judge expedient.

The President proposed that a considerable addition be made to the members of the Society, by the election of gentlemen who would be likely to advance the interests of the Society. The subject was referred to a Committee consisting of Drs. Gould, Wyman, and Kneeland.

The President proposed the following gentlemen for election as members: Thomas H. Perkins, John Welles, Amos Lawrence, Abbott Lawrence, Samuel Appleton, William Appleton, Nathan Appleton, Francis Appleton, William Lawrence, David Sears, William Amory.

Mr. J. W. Appleton was elected a member of the Society.

June 16, 1847.

Dr. Storer, Vice President, in the Chair.

Dr. Wyman read extracts from a letter from Mr. Squier, containing the results of his late investigations of the Indian Mounds of the West. Dr. W. exhibited specimens of Beads and other relics, and remarked upon the nature of the material of which they were composed.

Dr. Gould presented descriptions of the following Shells, from the collection of the Exploring Expedition.

NERITINA PORCATA. Testa obliqua, sub-hemispherica, solidiuscula, fusco-rubricans, maculis parvis nigris interdum tessellata, longitudinaliter striata et rugis conspicuis ordinatis sub-imbricatis porcata: spira vix tumida, anfractu ultimo penitus involuta; apertura parva, lunata; labro callo aurantiaco intus munito; labio plano, amplo, sanguineo; columellâ arcuatâ, denticulatâ. Diam. $\frac{7}{10}$, alt. $\frac{1}{2}$ poll.

Like N. *Bruguieri* and *canalis*, it has the spire wholly involved in the last whorl. The former has a somewhat elevated spire, a larger aperture, and a smooth and silky instead of a ridged surface. The latter is distinct by the canal which winds along the suture.

NERITINA CHOLERICA. Testa obliquè semiglobulosa, solidula leviter striata, castaneo-fusca, subtus interdum lineolis flexuosis nigris picta; spira vix exserta, ultimo anfractu recurrente ferè involuta: apertura obliquè semicircularis, magna, posticè canaliculata; labro flavo; labio planulato extrinsecus sanguineo tincto; columellâ albâ, valdè sinuatâ, denticulatâ. Operculum tenue, lividum, sulco divisum, granulatum, ad apicem flavidum. Diam. $\frac{3}{4}$ poll. *Hab.* Feejee Islands.

Allied to the dark varieties of M. *dubia*, but distinct by its involved and girded spire, like N. *Bruguieri*, and also by its very sinuous and strongly-toothed pillar lip. It has a channel towards the spire much like N. *canalis*, whose color and marking of the ventral face it also resembles.

NERITINA CHRYSOCOLLA. Testa solida, obliquè conico-globosa, coracina, lineis exilibus obliquis flavidis flexuosis picta: spira elevata, erosa; anfr. 2-3 ventricosis, infra suturam aliquid constrictis; apertura obliquè semi-elliptica; labro cœruleo, viridi limbato; labio convexo, luteo-virente; columellâ sinuatâ, denticulatâ: operculum osseum, salmonaceum, costâ bisectum. Long. $\frac{3}{4}$, lat. $\frac{3}{5}$, poll. *Hab.* Upolu.

Of the same group as N. *communis*, *lugubris* and *helvola*, but distinct by its green, blue-edged outer lip and yellowish green pillar lip, as well as by its very delicate zigzag lines, scarcely seen except on the ventral face.

Neritina helvola. Testa solida, conico-globosa, polita, coloribus fuscis et cervinis plerumque fulgurantibus diversimodè picta: spira prominula, erosa, anfr. 2 superstitibus: apertura obliquè semicircularis, helvola; columellâ convexiusculâ, callo copioso indutâ, acutè denticulatâ. Long. $\frac{6}{8}$, lat. $\frac{5}{8}$ poll. *Hab.* Feejee Islands.

Closely allied to N. *communis*, but is rather more globular, and generally smaller, and the aperture has a more nearly circular outline. It has less brilliant and defined coloring, and is always to be distinguished by its eroded tip, and the bright carnelian color of its inferior face.

Neritina siderea. Testa parva, ovata-globosa, polita, nitida, nigra, punctis sparsis albis notata: spira prominula, erosa; anfr. 2-3; suturâ marginatâ: apertura semicircularis, intus cœrulescens; labio plano, angusto, luteo; columella acuta, vix denticulata. Operculum fuscum. Diam. $\frac{1}{4}$ poll. *Hab.* Feejees.

About the size of N. *Bætica*, but more globose and solid; the inner lip less extended, and yellow instead of bluish, and it also has the white specks by which alone it may be recognized. In N. *Bætica* the opercle is flesh-colored.

Neritina amœna. Testa parva, ovato-triangularis, posticè constricta, striis incrementalibus ordinatis benè insculpta, coloribus nigris, rubris, flavidis plerumque fasciatim dispositis, et maculis quadratis albis nigro-umbratis tessellatim dispositis, picta: spira planulata, erosa, anfr. 2-3; apertura rotundato-elliptica, flavo-viridis; labro angusto, plano; columellâ valdè arcuatâ, 10 denticulatâ. Operculum viridulum, inornatum. Axis $\frac{3}{16}$, lat. $\frac{2}{8}$ poll.

Nerita musiva. Testa modica, subsolida, transversa, ovoidea, ventricosa, fusco-cinerea, longitudinaliter crassè striata, sulcis volventibus ordinatis arata, liris interpositis planulatis, sub-granulosis, lineolis crebris albidis sectis: apertura sub-circularis, caliciformis, peristomate sub-continuo: labro edentulo, albo, sulcis obliquis fuscis tenuiter arato; labio concavo, fusco, granulis paucis notato, denticulis tribus instructo. Axis $\frac{1}{2}$, lat. $\frac{5}{8}$ poll.

This unusually-shaped Nerite looks like a Stomatella, with the whorls rounded in every direction, when viewed at the back. Its

general form is somewhat like N. *signata*. It is remarkable for its nearly circular, cup-shaped aperture, its shining black, finely granulated concave pillar, and its gray, minutely mosaic surface produced by the white lines crossing its ridges.

Natica Lewisii. Testa magnifica, solidiuscula, conico-globosa, albida, epidermide sordidè stramineo induta, lineis minimis, confertissimis, flexuosis cincta; anfr. 6 ventricosis posticè valdè constrictis: apertura obovata, ampla; callo copioso albo castaneo-tincto supra umbilicum modicum simplicem profundum circumfluente, ad anfractum ultimum munita; fauce incarnescente. Operculum corneum. Axis $4\frac{1}{2}$–5, lat. 4 poll. *Hab.* Puget Sound.

This certainly exceeds in size all other species yet discovered. It is allied to N. *heros*, some specimens of which occasionally approach it in size. It is however less globular, and distinguished by the remarkable constriction near the suture. Specimens were brought from the mouth of the Columbia, by Lewis and Clarke, and have been designated by the above name.

Natica caurina. Testa parva, solida, levigata, globoso-ellipsoidea, albida, epidermidè tenui stramineo induta, vix perforata: spira obtusa, erosa, anfr. $4\frac{1}{2}$, ultimo sub-tabulata, anticè subcontracta; apertura parva, semilunaris; columellâ rectâ, posticè callo copioso albo indutâ. Axis $\frac{1}{2}$, diam. $\frac{2}{3}$ poll. *Hab.* Straits of De Fuca.

Nearly the same as N. *impervia*, Phil. from Cape Horn, which has a very depressed spire, and its umbilic closed by a semicircular callus. Its form and color is like N. *immaculata*, Tott., though it is much larger. It is more solid and less globular than N. *Grœnlandica*.

Natica soluta. Testa parva, globosa, sordidè alba, striis tenuissimis cincta: spira anfr. 5 ventricosis, supernè sub-tabulatis; sutura profundissima; apertura semilunaris, angulo postico callo firmato; labio acuto, tenui, ad basim incrassato, subeffuso: columella recta, callosa, post umbilicum parvum profundum dilatata. Diam. $\frac{1}{2}$ poll.

A small, nearly globular shell, allied to N. *borealis*, Gray, and N. *globosa*, King, but distinguished by its deep-channeled suture.

Dr. Shurtleff nominated for membership Henry B. Humphrey, Esq.

Dr. Storer announced a bequest of ten volumes, from the Library of the late Judge Davis.

Prosperi Alpini de Plantis Ægypti Liber. 4to. Venetiis. 1592.

Cuvier. La Regne Animal, distribué d'après son organisation. 8vo. 4 vols. in 3. Paris, 1817.

Blainville. Manuel de Malacologie et de Conchyliologie. 8vo.; 2 vols. Paris, 1817.

Montfort. Conchyliologia Systematique et Classification Methodique des Coquilles. 2 vols. 8vo. Paris, 1808.

Nic. Josephi Jacquin Selectorum Stirpium Americanarum Historia. 8vo. Manhiemii, 1788.

Deshayes, G. P. Description de Coquilles characteristiques des Terrains. 8vo. Paris, 1831.

ADDITIONS TO THE LIBRARY.

Gray's Genera of Birds. Part 38. Long 4to. London, 1847. *Audubon Fund.*

Audubon and Bachman. Quadrupeds of America. Plates, 106–110. Folio. *Subscribers.*

Discovery by C. T. Jackson, M. D., of the Applicability of Sulphuric Ether in Surgical Operations. By M. Gay. 8vo. pamph. Boston. *Author.*

Proceedings of Academy of Natural Sciences of Philadelphia. Vol. III. No. 8. March and April, 1847. *Academy.*

Some Account of the Letheon; or, Who was the Discoverer? By Edward Warren. 8vo. pamph. Boston. *Author.*

Paleontologie Française. Description Zoolog. et Geolog. de tous les Animaux Mollusques et Rayonnés Fossiles de France. Par Alcide d'Orbigny. 122 Livraisons. 8vo. Paris, 1842–6. *The Author.*

Bulletin de la Société Geologique de France. Vols. 1, 2, and Parts 1–8. Vol. III. 8vo. Paris, 1844–6. Deuxième Serie. *Geological Society of France.*

July 7, 1847.

Dr. Cabot in the Chair.

Dr. Kneeland presented a Cranium of *Coryphœna*, Lin. The fish was taken by Dr. K. with hook and line, about midway of the Atlantic ocean. Length 3 feet. The head is much elevated, and both palate and jaws furnished with teeth.

Dr. Kneeland read from the Illustrated News, the remarks of Mr. Smee, respecting the *Aphis vastator*, to which is attributed the disease of the Potato plant.

Dr. Gould read extracts from a letter of Dr. G. A. Perkins, of Cape Palmas, accompanying which were specimens of Shells, &c.

Dr. P. speaks of the difficulties which attend the pursuits of the naturalist in that country, and adds his own experience. A box of Shells, prepared for his Boston friends, had been invaded by the Termites, who ate out the paper packing, and deposited in its place their insoluble mortar, cementing the whole together, and spoiling the work of months. Among the specimens sent were a bivalve shell, (Psammobia?) with three adductor muscles, and an Orbicula, which he supposes may be a new species.

Dr. Gould, in behalf of the Committee to which was referred the subject of enlarging the number of members of the Society, reported the following vote, which was adopted.

"That the thanks of the Society be given to the gentlemen who have contributed to the fund for procuring a building for the Society, and that those whose contributions amount to fifty dollars, be notified that they are recognized, agreeably to the Constitution of the Society, as its *Patrons;* that they will be entitled to the use of its Library and Cabinet, as members; and that the hope be expressed to them, that they will continue to manifest an interest in the objects and prosperity of the Society."

Dr. Storer communicated, from Mr. Hentz, the conclusion of his paper on *Araneides*, for the Journal.

Mr. Henry B. Humphrey was elected a member of the Society; Mr. Edward Desor, and Count Francis de Pourtalès of Neufchatel, were elected Corresponding members.

July 21, 1847.

Dr. Storer, Vice President, in the Chair.

Dr. Storer stated, that he had made a visit of a few days at Provincetown, where he had found, as he believed, two new species of *Alosa* and one of *Platessa*.

Alosa cyanonoton. Above bluish, cupreous upon the sides and opercula, silvery beneath; a large black spot upon the shoulder. Where the scales were removed, no other spots are observed, as in the A. *sapidissima*, but the entire upper portion of the body is of a deep greenish blue color. The length of the head is less than one-fifth the length of the body. Caudal pouches. Length ten inches. Called *Blue-back* by the fishermen at Provincetown. D. 17, P. 18, V. 10, A. 17, C. 20.

Alosa lineata. Sides silvery, with six or eight indistinct longitudinal bluish lines; the pectoral and caudal fins are of a dark brown color, the anal and ventrals nearly white. The head equal in length to about one-fifth the entire length; the lower jaw the largest; the chin is prominent. Caudal pouches. Length about fifteen inches. Called by the fishermen *Hickory Shad*. D. 17, P. 16, V. 8, A. 20, C. 20.

Platessa quadrocellata. Body elongated: the length of the head is not quite equal to one-fourth the length of the entire fish. Of a gray color, thickly spotted with brown, including all the fins. About the middle of the body, just beneath the dorsal fin, and directly opposite this, above the anal fin, are situated two large, nearly black ocelli, surrounded by a pinkish halo; at the base of

the caudal fin are two similar smaller ocelli. The caudal fin is large and angular. Length of species about sixteen inches. D. 86, P. 18, V. 10, A. 76, C. 17.

Dr. S. also read, from his notes, taken on the spot, interesting details relating to the Mackerel Fishery. He mentioned, that immense numbers of Whiting, taken in the mackerel nets, are thrown away as useless. Prof. Agassiz expressed his surprise at this fact, and said, that in Europe the Whiting was considered a valuable fish for the table, and preferred to Cod.

Dr. Wyman exhibited a Cranium of *Delphinus globiceps*, having the first four cervical vertebræ connected by anchylosis, as was also the atlas with the occiput. This he considered to be a morbid state of the parts; as in more than twenty other remains of the same portions of the skeletons, which he had found at the same time and place, viz. the beach at Provincetown, on a late visit, no such anchylosis existed.

Prof. Agassiz remarked, that the specimen was interesting as showing an analogy between the Cetacea, the lowest order of the Mammalia, and Fishes, in respect to the shortness and immobility of the cervical vertebræ.

Prof. Agassiz also remarked on the fortunate position of Boston naturalists, in their location at a seaport. In this case, Dr. Wyman had had an opportunity to correct the inferences drawn from an abnormal specimen, by immediate comparison with numerous others. No universities in Europe, excepting those of Naples and Greifswald, are situated upon the immediate seacoast. Marine species have to be described from single specimens, sent to naturalists, residing at a distance from the sea; and such descriptions are apt to be rather portraits of individuals than definitions of species.

Dr. Gould announced the reception of a box from Dr. J. Lawrence Smith, at Constantinople, containing Birds and Crustacea.

He hailed with pleasure this first step to an interchange of specimens of natural productions with the Turkish empire. He

expressed a hope that some of our number would make a return in kind to Dr. Smith. At his motion, the thanks of the Society were voted to Dr. Smith.

Dr. Wyman announced the reception of a large and beautiful specimen of *Selenite* from California, presented by John Henderson, Esq. of St. Louis. On his motion, the thanks of the Society were presented to the donor.

Dr. Wyman also announced, from Dr. Savage, several Crania, and other important bones of Chimpanzée, and a Nest of Termes bellicosus; with other specimens, animal and vegetable. Thanks were voted to Dr. Savage for these donations.

Joshua Tucker, M. D., Edward R. Dearborn, and John T. Heard, were elected members.

August 4, 1847.

Dr. Storer, Vice President, in the Chair.

Dr. Wyman exhibited donations, from Dr. Savage, of objects from Africa, viz. Nest of *Termes bellicosus;* Fruit of *Adansonia digitata;* Nuts of the *Elais Guineensis,* or Oil Palm-tree, on which the Chimpanzée feeds; native Cloth, from the bark of a species of Ficus; Teeth and Tusk of an African Elephant. He also exhibited four Crania of *Troglodytes niger,* and four Crania and other important bones of a species of Troglodytes hitherto undescribed.

Dr. Cabot asked leave to make arrangements to have mounted all the birds now in the drawers, preparatory to their removal to the new hall. Leave was given, on condition that so much of the expense of said arrangement, as shall exceed the due proportion of the Society's funds, applicable to that department of the Cabinet, shall be provided by Dr. Cabot from other sources.

Dr. Shurtleff moved, that the Curators of Herpetology and Comparative Anatomy, have leave to expend upon their departments such sums as may be necessary to fit them for removal, under the same condition as was annexed to the vote just passed, in regard to the department of Ornithology. It was so voted.

It was voted, that the care of the removal of the Collection, in its various departments, and its re-arrangement in the new hall, be committed to the Curators of each department, in conjunction with Dr. Shurtleff.

A fine specimen of Selenite from California, presented by Mr. John Henderson, was committed to the Curator of Mineralogy.

The Vegetable specimens, presented by Dr. Savage, were committed to the Curator of Botany.

August 18, 1847.

Dr. Storer, Vice President, in the Chair.

Dr. J. Wyman read a communication from Dr. Thomas S. Savage, describing the external character and habits of a new species of Troglodytes (T. *gorilla*, Savage,) recently discovered by Dr. S. in Empongwe, near the river Gaboon, Africa.

This animal is known to the natives under the name of Engēena, and is much larger and more ferocious than the Chimpanzée. Its height is above five feet; but it is remarkable for the disproportionate breadth of the shoulders, which is double that of the Chimpanzée. The hair is coarse, and black, except in old individuals, when it becomes gray. The head is longer than that of an ordinary man by two inches, and is remarkable for having a crest of coarse hair over the sagittal suture, which meets at right angles a second, extending over the upper part of the occiput,

from one ear to the other. The fore-arm is much shorter than the arm, the hand is remarkable for its great size, and the thumbs larger than the fingers. A slight tuft of hair exists at the extremity of the *os coccygis* — no tail, no callosities. Its gait is awkward and shuffling, supporting itself on the feet and fingers, and palms of the hands; but not, like the Chimpanzée, resting on the knuckles.

They live in herds, the females exceeding the males in number. Their habitations, like those of the Chimpanzée, consist of a few sticks and leafy branches, supported by the crotches and limbs of the trees, which afford no shelter, and are occupied only at night. They are exceedingly ferocious, and objects of terror to the natives, who seldom encounter them except on the defensive. The killing of a Engēena is considered an act of great skill and courage, and brings to the victor signal honor. Its intelligence is said to be inferior to that of the Chimpanzée.

The *Amomums*, in Empongwe, which constitutes, in every locality of the African Orangs, a prominent article of food, Dr. S. found to be of different species from those of Cape Palmas. At the latter place but one species, and a variety with acid pulp, is known; but at Empongwe three. Fruits, distinguished by the opposite properties of acidity and sweetness, are eaten with equal zest. The stem of the *Saccharum officinarum*, the fruit of the *Elais Guinensis*, *Carica papaya*, *Musa sapientium*, and others, unknown to botany, furnish its articles of food.

The Orangs are regarded by the natives as degenerated human beings. The Encheeco, or Chimpanzée, being less ferocious, and more intelligent, is supposed to have the spirit of a *Coast-man*, but the Engēena that of a *Bush-man*. Their flesh, when obtained, is eaten by the natives, as well as that of the Chimpanzée.

Dr. Wyman exhibited four Crania (two male and two female), of the Engēena; also the long bones of the extremities, a male and female pelvis, and some other bones. The following osteological characters were pointed out as indicating that the Engēena is specifically distinct from the Chimpanzée, the only Orang hitherto discovered in Africa.

The Engēena differs from the Chimpanzée, 1st. In its much

greater dimensions; 2d. In the size and form of the superciliary ridges; 3d. In the existence of a broad and thin interparietal and occipital crest in the males, and in a rudiment of the same in the females; 4th. In the great strength and arched form of the zygomatic arches; 5th. In the form of the anterior and posterior nasal orifices; 6th. The incisive alveoli are more narrow, and do not project beyond the line of the face; 7th. The scapula is more nearly equilateral, the spine divides it more equally; and, 8th. The *ossa ilii* are much broader, more concave, and the anterior spines project much further forwards.

The Engêena, in the strength of the zygomatic arches, in the existence of the crests, and in the great size and strength of the lower jaw, resembles the Orangs of the eastern world; but is readily distinguished from them by the great size of the superciliary ridges, by the straight outline of the face, by a fifth tubercle on the last molar of the lower jaw, by the existence of a depression for a round ligament on the head of the thigh-bone, by the more anthropoid character of its pelvis, and by having the ulna shorter than the humerus.

Mr. Desor exhibited numerous specimens of *Ostrea, Venus mercenaria, Purpura lapillus, Buccinum obsoletum*, &c., collected by himself from an excavation recently made in the drift at Brooklyn, New York.

They were found in a deposit of grooved and striated pebbles, forming apparently an anticlinal axis, on both sides of which are overlying strata of sand and clay, inclining in both a northerly and southerly direction, the shells being in the upper portion of the gravel bed. This shows the area of the fossiliferous drift formation to be more extensive than has been supposed.

Mr. Desor exhibited other delicate Shells, *Mya arenaria*, and *Tellina Groenlandica*, from the drift at Westport, on Lake Champlain, which were in such a state of integrity as to render it probable that they had lived where they were found.

Dr. Storer gave some notices of our Torpedo. He remarked,

"Although I had previously observed that the *Torpedo occidentalis* was 'undoubtedly a Southern species,' (see Proceedings

of Hist. Nat. Society, [vol. ii. p. 71,) I had never received any *positive information* of its being *taken south of Cape Cod*, until I visited Gay Head, in August, 1846. While on a visit at that place, I learned from Capt. Learned West, of Chilmark, and Mr. Samuel Flanders, keeper of the light-house at Gay Head, that in Chilmark, three miles from Gay Head, they had known at least fifteen or twenty of this species to be taken by hook and line, and also in seines, in the spring of the year, for several successive years."

Dr. Cabot remarked, that he had, last year, stated the occurrence of the Arctic Tern and Roseate Tern, at Beverly, Mass. He had this year procured specimens of both.

Dr. J. B. S. Jackson stated that the Blue-fish, *Temnodon saltator*, had been caught, in considerable abundance, at Nahant.

Dr. Gould stated, that a box, containing stalks of Maize, fifteen feet in length, had been received from President Malcom, of Georgetown, Kentucky.

ADDITIONS TO THE LIBRARY.

Gray's Genera of Birds. Part 39. For July. London, 1847. *By purchase.*

J. J. Audubon and J. Bachman. Viviparous Quadrupeds of North America. Vol. I. New York, 1847. *From Subscribers.*

Silliman's American Journal of Science and Arts. 2d Series, No. 10. For July, 1847. *Editors.*

Magazine of Horticulture, &c. No. 150. For June, 1847. *Editor.*

Magazine of Horticulture. Edited by C. M. Hovey. No. 152, for August, 1847. 8vo. pamph. *By exchange.*

Origin of the Grand Outline Figures of the Earth. By James D. Dana. 8vo. pamph. New Haven, 1847.

Geological Effects of the Earth's Cooling from a state of Igneous Fusion. By J. D. Dana. 8vo. pamph. New Haven, 1847. *The Author.*

September 15, 1847.

A. A. Gould, M. D., in the Chair.

Dr. Wyman stated that he had received a letter from Dr. Savage, giving Prof. Owen's opinion of the *Simia*, portions of whose skeleton were laid before the Society at a late meeting.

Prof. Owen intimates that they may be those of an adult Chimpanzée, from which remark Dr. Wyman inferred that Prof. Owen could not have seen an adult Chimpanzée; the British Museum, and the Hunterian Collection do not contain such. Dr. Wyman has had the opportunity of comparing the remains in question with eight specimens of the adult Chimpanzée in the Cabinets of Boston and Philadelphia.

Dr. Kneeland exhibited the skull of a Woodchuck, showing a curious elongation and distortion of the upper incisors.

They were deflected to the right, so that the extremity of the right incisor was about 7-8ths of an inch to the right of the median line of the jaw. The left incisor, also deflected to the right, had curved to meet the maxillary bone on the right side; which it had perforated to the extent of an inch, a little before the molar teeth, displacing the infra-orbital foramen upwards and outwards; its vertex about half an inch from the median line. The vertex of the right incisor was not chisel-shaped, but rounded; that of the left more pointed. Their anterior surface was considerably worn away by the lower incisors. As the lower jaw was wanting, he could not say whether it contained more than one incisor, though perhaps the extent of worn surface on the upper incisors would indicate the existence of two lower incisors. The right incisor, measuring the convexity of the curve, was three inches long; the left very nearly four inches; length of alveolar portion one and one-third inches.

Dr. Wyman exhibited the Cranium of an Otter, (*Lutra Americana*,) showing the manner of the articulation of the lower jaw with the cranium. The two were so fitted to each

other, that unless the two halves of the lower jaw are separated at the symphysis, they cannot be dislocated at the temporo-maxillary articulation.

Dr. Gould read a letter from Dr. B. L. C. Wailes, of Washington, Miss., containing notices of Fossils from the Natchez bluffs and Vicksburg, specimens of which he had sent to the Society.

On motion of Dr. Gould, it was

Voted, That the Secretary be directed to tender to the Association of Geologists and Naturalists the use of the Hall of the Society, and of its Cabinet and Library, during their approaching session in this city.

Mr. Frederick Billaud was elected a Member of the Society.

ADDITIONS TO THE CABINET.

Casts of Fossil Shells from New Holland, collected by the Exploring Expedition, and recently described by Mr. Dana, in Silliman's Journal. *From J. D. Dana, Esq., of New Haven.*

ADDITIONS TO THE LIBRARY.

American Journal of Agriculture and Science, for July, 1847. *From the Editors.*

Siedhof. Deutschland's Stubenvögel. 12mo. Braunschweig. 1845.

Proceedings of the Academy of Natural Sciences. Vol. I. No. 5. Vol. III. Nos. 1, 2, and Title-page and Index to Vol. II. *From the Academy.*

Deleuze. Histoire et Description du Museum Royal d' Histoire Naturelle. 2 vols. 8vo. Paris, 1823. *From A. Vattemare. By Exchange.*

October 6, 1847.

J. C. Warren, M. D., President, in the Chair.

Mr. Alger read remarks on a Mineral specimen, which he exhibited, and had lately received from Dr. Feuchtwanger as a new species.

Mr. Alger suspected, from its gem-like appearance, hardness, and weight, that it might be allied to the Sapphire class; and on further examination, pronounced it a splendid red Sapphire, or Corundum. It is from Cherokee County, Georgia. Mr. Alger's paper will be published in the Journal.

Dr. Gould gave descriptions of the following species of Shells from the collection of the Exploring Expedition.

Bulla parallela. Testa parva, tenuis, cylindracea, lactea, anticè rotundata, posticè conica, imperforata, longitudinaliter minutissimè striata, ad verticem et ad basim striis undulatis decussata: apertura angusta, deorsum dilatata; columellâ callo haud appresso indutâ; labro ultra spiram adscendente, tunc deorsum intorta. Long. $\frac{9}{20}$, lat. $\frac{1}{5}$ poll. *Hab.*

Much smaller and thinner than B. *solidula*, though striated at the ends like it, and having the same conformation of the lip. Its sides also are parallel and not bulging.

Tornatella bullata. Testa parva, ovata, tenuis, albida, epidermide stramineo fugacissimo induta, spiraliter sulcata, sulcis linearibus ad 5 ordinatim dispositis in singulis anfractibus: spira prominula, turrita; anfr. 5 tabulatis, ultimo magno, ventricoso, 15-sulcato, supernis planulatis; sutura canaliculata: apertura semilunaris; columellâ uniplicatâ, planulatâ. Long. $\frac{1}{4}$, lat. $\frac{1}{6}$ poll. Dredged off Patagonia.

This little species, like T. *puncto-striata* and T. *venusta*, to which it is allied, has not the ivory surface of most species. It is well characterized by its form and sculpture.

Haliotis crispata. Testa parva, tenuis, convexa, elongato-ovalis, undulis obliquis angulatis divaricantibus rugata, spiraliter striata, rubida: spira elevata, sub-mediana; foraminibus parvis,

circularibus, confertis, ad septenis perviis, extrorsum canaliculatis; intus undulosa, nitida, argentea. Long. $1\frac{2}{8}$, lat. $\frac{7}{8}$ poll. With New Holland shells.

About the size and form of H. *stomatiæ-formis*, Reeve, but distinguished from all others by its crowded angular ripples, arranged somewhat like the colors on H. *ziczac*. No shell approaches it in this respect except the very young of H. *australis*.

Scalaria gracilenta. Testa minuta, gracilis, elongato-turrita, alba, costis longitudinalibus tenuibus ad 16 clathrata, spiraliter inter costas striata, imperforata: spira anfr. 9 cylindraceis, contiguis; suturâ profundâ: apertura circularis, ab anfractu penultimo haud sejuncta; labro continuo, reflexo, posticè et ad columellæ basim dilatato. Long. $\frac{1}{4}$, lat. $\frac{1}{16}$ poll. *Hab.* Mangsi Island.

One of the most slender and delicate species of the genus, resembling the figure of S. *gracilis*, Sowb., but agreeing still more, in its characters, with his S. *turricula*.

Scalaria texturata. Testa parva, tenuis, elongato-turrita, rubescens, sub-perforata: spira anfr. 8 rotundatis, ferè solutis, costis 9 albidis elevatis reflexis supernè spinosis clathrata, et striolis inter costas confertissimè texturata: apertura circularis. Lat. $\frac{1}{5}$, alt. $\frac{1}{3}$ poll. *Hab.*

A very pretty, slender species, and well characterized by the numerous striæ between the ribs, forming a delicate net-work. It is allied to S. *turricula*, Sowb., which has only revolving lines, is less conical, and the whorls less rounded.

Littorina cincta. Testa parva, rudis, conico-globosa, fuliginosa, interdum albido-zonata, costulis elevatis rotundatis ordinatis cincta, interspatiis excavatis et minutissimè decussatim striatis: spira conica, acuta; anfr. 5 ventricosis, ultimo ampullaceo; suturâ bene impressâ: apertura ampla, sub-circularis; labro acuto, fusco-marginato; columellâ albâ, planulatâ, ad basim expansâ. Axis $\frac{5}{8}$, diam. $\frac{1}{2}$ poll. *Hab.* Puget Sound.

More globular and proportionally shorter than any described species. Generally resembles L. *striata*, but is still less elongated, less solid, and has the ribs larger and less numerous, and its color more dusky. It may also be compared with L. *breviculus*.

The President reported that he had, in conformity with a vote of the Society, communicated to Mrs. Binney, and the children of the late President, the thanks of the Society for the liberal donation received from them, in aid of the fund for the purchase and adaptation of the new building. A copy of the letter was submitted.

Dr. Shurtleff having given notice that the amount appropriated for the repairs of the building had been expended, he was authorized to expend $1000 more, if necessary.

Mr. Edward C. Cabot, and Mr. Waldo I. Burnett, of Boston, and Mr. B. C. Pierce, of Beverly, were elected members of the Society.

ADDITIONS TO THE LIBRARY.

Brieslak. Institutions Géologiques. 3 vols. 8vo. Milan, 1818. *From A. Vattemare. By Exchange.*

Desnoyers. Récherches Géologiques et Historiques sur les Cavernes, et particulièrement sur les Caverns à Ossemens. 8vo. Paris, 1845. *From the Same.*

Silliman's Journal. No. 11. For September, 1847. *From the Editors.*

Annals of the Lyceum of Natural History of New York. Vol. IV. Nos. 10 and 11. July, 1847. *From the Lyceum.*

Annals and Magazine of Natural History. Nos. 131 and 132. August and September, 1847. *From the Courtis Fund.*

Gray's Genera of Birds. Part 40. September, 1847. *From the Courtis Fund.*

Magazine of Horticulture. No. 153. For September, 1847. *By Exchange.*

October 20, 1847.

J. C. Warren, M. D., President, in the Chair.

Dr. Gould read portions of a letter from Dr. Wyman, containing notices of the Academy of Natural Sciences, at

Philadelphia, and showing that Institution to be in a condition of activity and prosperity well calculated to excite emulation.

Mr. Teschemacher exhibited the stem of an arborescent Yucca, the head of which had been destroyed —

It had thrown out numerous adventitious buds from the lower part. These buds were arranged in a regular spiral direction, and the whole appearance of the stem resembled very closely the figure of *Halonia regularis*, (Lindl. & Hutton, vol. iii. tab. 228.) This, being the abnormal state of this plant, might, he thought, account for the scarcity of specimens of Halonia.

He also exhibited transverse sections of these buds, showing their origin in the central cellular substance of the stem, the external portion of the stem (the false bark) being a mass of closely compact vascular matter one-fourth to one-half an inch thick, through which the buds pass, in a conical form; he compared these with a beautiful specimen of some symmetrically arranged conical forms, impressed with vascular appearances, found in the body of the Anthracite coal of Pennsylvania.

He also presented some conical forms, composed of distinct and separate fibres, in the fine interstices of which were numerous microscopic but perfect crystals of Carbonate of Iron. These specimens he had obtained thirty years ago, from coal and iron mines in England; but until the present time, he had not been able to get any light on their singular but very distinct structure. Two of them are still embedded in the rocky mass. He now thinks these conical forms are of vegetable origin.

He remarked, that Analogy, not Identity, was the object to be pursued in our present researches into fossil vegetation; he thought the analogy close, between the false vascular bark of the Yucca and the so-called bark of many Sigillariæ; that the slight impressions on the soft internal part of the Yucca, left by the apices of the conical buds, were analogous to those seen on Sigillariæ on removing the carbonized bark.

He thought it not improbable, from the great resemblance of the scars of buds on the external part of the stem of Yucca, to the markings on Sigillariæ and Lepidodendra, that many of these markings are scars of buds, instead of those of leaves. He ex-

hibited a specimen of a carbonized stem in the Anthracite coal, with a distinct branch forming an angle of about 50°.

He finally offered his opinion that a careful investigation of tropical plants, in their native forests, would show analogies materially changing the present received ideas of fossil vegetation.

Dr. Cabot exhibited fossils from the neighborhood of Moosehead Lake; Terebratulæ, Spirifers, and Crinoidea, Prof. Rogers pronounced them analogous to those of the Hamilton and Chemung groups of the New York series.

ADDITIONS TO THE LIBRARY.

James Hall. Crinoidea of the inferior strata of the New York System. Part I. 4to. pamph. Albany, 1847. *From the Author.*

S. S. Haldeman. Materials towards a History of the Coleoptera Longicornia of the United States. 4to. pamph. Philadelphia, 1847. *From the Author.*

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. III. No. 9. May and June, 1847. *From the Academy.*

R. W. Gibbes. Memoirs of the Fossil genus Basilosaurus; with notice of specimens from the Eocene Green Sand of South Carolina. 4to. pamph. Philadelphia, 1847. *From the Author.*

Magazine of Horticulture. No. 154. October, 1847. *From C. M. Hovey, Editor.*

November 3, 1847.

J. C. Warren, M. D. President, in the Chair.

Dr. C. T. Jackson exhibited several Vertebræ, dug up in a clay stratum, near the bed of a small stream in Machias, Me., and presented by Mr. Temple, of that place. They were found at the depth of about eight feet. Dr. J. considered them to be those of a Cetacean. They were committed to Count Pourtalés.

Mr. Desor inquired whether there were any shells found with the vertebræ at Machias. Mr. Temple replied in the negative. Mr. Desor remarked, that, from the position of the bones, they were of as high antiquity as those of the Mastodon. Mr. Desor also remarked on Mr. Lyell's theory respecting the evidences furnished by shells in the recent formations, as to the condition of climate at the time of their deposit, and stated some facts at variance with that theory.

Dr. C. T. Jackson stated that there were three strongly-marked gradations in the Diluvium of Maine, marked by their characteristic fossils. *Pecten Islandicus* was found all along the coast, from Kittery Point to Lubec, in a position thirty feet lower than Nucula, so abundant at Westbrook, South Berwick, and Portland. A stratum still higher, by about the same interval, was found at Bangor, with still different genera of shells.

Dr. Gould remarked, that *Nucula Jacksonii* and *Nucula Portlandica* were different from any living species yet found, and these are the only ones, in the clay beds, which have not yet been found in our present waters.

Dr. Jackson also exhibited specimens of Copper and Silver Ore from Cliff mines, Lake Superior, showing the metals in a pure state in immediate contact, yet unalloyed; a result which, he stated, had not as yet been effected by any artificial means, and difficult to explain by natural agencies.

He suggested Electricity as the cause, and stated that Prof. Locke had been engaged in making magnetic observations in the mines, some of the results of which he stated.

Dr. Storer exhibited the Jaw of *Carcharias griseus*, Ayres; and Teeth of C. *obscurus*, the only Shark yet found in our waters with serrated teeth.

Dr. Warren exhibited Casts of the Bones of *Dinornis gigas*, of New Holland, and compared them with the corresponding bones of the Ostrich, which they greatly exceeded in length and bulk.

Mr. J. W. Whitwell was elected a member of the Society.

November 17, 1847.

J. C. Warren, M. D., President, in the Chair.

Dr. Cabot read a paper entitled "A Comparison between *Sterna Cantiaca*, Gm. of Europe, and *Sterna acuflavida*, Nobis, hitherto considered identical with S. *Cantiaca*;" specimens were exhibited. The following measurements from adult, full-plumaged specimens were given:

American.	*Millimetres.*	*European.*
Bill along ridge	49	57
" " gape	64	75
From the nostril to the point of the bill	36	41
Length of nostril	6	9
Length of lower mandible along the centre, (measuring to the feathers,)	41	47
Length of do. do. along the side, do. do.	51	62
Width of bill at commencement of feathers	8	$7\frac{1}{2}$
Depth of do. do. do.	$11\frac{1}{4}$	$12\frac{1}{2}$
Length of wing from flexure	290	317
Length of tail to tips of lateral feathers	136	149
Length of tarsus	25	28
Middle toe without the claw	18	21
Middle claw	$7\frac{1}{2}$	9
Inner toe with claw	17	20
Outer do. do.	21	26
Thumb	$6\frac{1}{2}$	$8\frac{1}{2}$

Besides these differences in measurement of parts not subject to change from improper stuffing, &c., we find that the coloring differs in some very important particulars. In the American bird the yellow is strictly confined to the tip of the bill, and the line of union of the yellow and black is perpendicular and unbroken, whereas in the European bird the yellow runs up to the inner edge of the symphysis on the under side of the lower mandible, and almost as far on the upper edge; and on the upper mandible also, it extends both on the edges and on the ridge much higher than in the American bird. The primaries are

much darker in the American bird than in the European, and the white line which runs along the inner edges and forms their tips in the European bird, disappears in the American before it gets within half an inch of the tip; besides being much narrower. There are also some important differences in form. The projecting point at the symphysis on the under side of the lower mandible is more marked in the American than in the European bird. The claws of the European bird are larger and much more arched than those of the American. The bill of the European bird is much narrower in proportion than the American, and is more bent.

The specimen of S. *acuflavida* in his collection was procured at Tancah,* on the coast of Yucatan, on the 25th of April, 1842, and is mentioned in the appendix of Mr. Stephens's Incidents of Travel in Yucatan, under the name of S. *Boysii*.

Dr. Cabot also described the following species of Wren, under the name of TROGLODYTES ALBINUCHA.

	Millimetres.
Total length	140
Length of wing from flexure	58
" tail	51
" head and bill	38
" bill along the ridge	17
" bill along the gape	22
Width of bill at feathers	$3\frac{1}{2}$
Depth " "	$3\frac{3}{4}$
Length of tarsus	20
" middle toe with the claw . . .	22
" inner toe " " . . .	15
" outer toe " " . . .	16
" thumb " " . . .	17

The bill is bent from the base to the tip. The claws are much curved and very sharp. The head, back, and upper sides of the wings and tail, brown; a line of white, with black or dark brown intermixed, passes over the eye, and meets with a similar line,

* This is the name of a rancho situated on the site and amid the ruins of an aboriginal city, and owned by the sons of a piratical captain, by the name of Molas. It is nearly opposite the Southern extremity of the Island of Corumel, lat. 20° 15′ N.

which passes under it, and they form a patch on the sides of the neck extending round to the nape. Chin, throat, and breast white; flanks and abdomen light yellowish brown, darkest near vent. On the rump are some white and dark brown or black spots intermixed with the brown of the rest of the back. Under tail-coverts, the outermost, and outer webs of next three tail-feathers, and outer edges of first and second primaries, barred with white or yellowish white, and dark brown or black. There are many black bars running across upper side of wings and upper tail-coverts. The four middle tail-feathers are brown, with many black spots. The upper mandible is dark horn color; the under mandible is the same at its tip, but is almost white on the under side and at base. The fourth and fifth primaries are longest and the first is shortest.

The specimen from which the description was taken was the only one observed, and was procured near Yalahao, in Yucatan, April 6th, 1842.

Dr. Cabot also announced the donation from Maj. Townsend, of two specimens of Birds from Arkansas, namely, *Icterus xanthocephalus* and *Recurvirostra Americana.*

Dr. Gould exhibited specimens of *Planorbis multivolvis,* Case, brought by Mr. C. J. Foster from the Lake Superior region, recently described by Mr. Case in Silliman's Journal. It is a very decidedly-marked species. Dr. Gould thought that some other specimens accompanying them, allied to T. *bicarinatus,* were also new.

Mr. Peabody presented a bottle of small Fishes, from Lake Superior, collected at the suggestion of Prof. Agassiz. He also exhibited specimens of Fluor Spar, of various forms and colors, from the mine of C. A. Stickney, Esq. Shawneetown, Ill. He also pointed out crystals of Cadmium Blende, of which he gave the following results of analysis: Silica 4.800; iron 61.000; cadmium 3.100; sulphur 31.000.

Dr. C. T. Jackson exhibited specimens of Copper from the Bruce mine, north side of Lake Superior; Copper Pyrites and Grey Sulphuret mixed with Quartz rock, of a richness estimated at 15 per cent. He also exhibited a lump of

the native Copper from Isle Royale, from a vein 350 feet below the surface, where the metal, having been cooled under vast pressure, might be expected to be of a proportionate density; on comparison with other specimens, the specific gravity was:

Specimen from the cliff at Keweenaw Point .	893.18
Hammered copper	889.
Native copper, under ordinary circumstances .	858.40

Mr. J. E. Teschemacher exhibited a specimen of Anthracite Coal, on which was a mass of carbonized wood perfectly structural; in the centre of this mass ran a number of jointed vessels (?), spreading out in various directions; other masses on this specimen contained vessels also.

Mr. T. also stated, that after careful examination of numerous specimens, he had been forced to the conclusion that many of the appearances in the anthracite coal must be due to the growth of fungi during the coal epoch; that many specimens exhibited what might easily be interpreted as Mycelia, and that the investigation of the decarbonized matter seemed to him strongly to support this view, which, in presenting a lower order of vegetation at that period, would accord with the plan exhibited in other existences. One form agrees remarkably with a figure of Husseia, a new fungus, given by Sir W. J. Hooker in a late Number of the Journal of Botany. He stated that he had, within a few days, discovered several more specimens of the vegetable forms found in the Shale, including some of the rarest; and that in others he had found the interior of large stems as carbonized matter, which, if it proves still to retain its original structure, as it appears to do, will no doubt throw light on the analogy of the coal vegetation to that of the present period.

Mr. Desor exhibited a sketch, by Mr. Edward C. Cabot, of the remarkable parallel trains of Boulders in Berkshire County, Massachusetts, lately described by Prof. Rogers in the Society's Journal.

Mr. D. called attention particularly to the fact that the trains consisted of angular boulders, resting, in parts of their route, upon rounded drift pebbles. Similar facts were common in Switzerland; but so far as hitherto observed, rare in this country. He

also expressed the opinion that the Glacier theory would account for this phenomenon as well as any that has yet been suggested; and pointed out, on a map of the glaciers of the Alps, similar trains of boulders parallel to the course of the glaciers.

The President exhibited a Cast, lately procured from England, of the lower jaw of *Mastodon elephantoides*, the original of which was brought from India by Dr. Falconer.

Dr. Shurtleff announced the donation from Dr. W. R. Lawrence, of a series of fœtal Skeletons. Thanks were voted to Dr. Lawrence for this donation. Also the acquisition of the Skeleton of a Bison, and a Moose, for the latter of which, the Society was indebted to their President.

Dr. Abbot gave an account of the Singing Mouse, which he had recently seen in Philadelphia.

This mouse was captured a few months since in an apartment where Canary birds were kept. Its note resembles very much the sounds produced by a whistle made of quill, when blown with its extremity in a vessel of water. It seems to be as near an imitation of that of a Canary bird, as its organs are capable of. It consists of a succession of very rapid trills, interrupted at intervals by a few mellow warbling notes, with rests between; and sometimes a few notes like the mild chirp of the American robin while unmolested in the vicinity of its young. Sometimes it is a rapid repetition of two notes with a musical interval of a second between; very much like the mocking bird's imitation of the creaking of a wheelbarrow. The sound is kept up for hours together without intermission, and although perfectly voluntary, it does not interrupt the animal's occupations, not even feeding. It is produced equally during inspiration and expiration; it is very difficult to detect any difference in its character corresponding to the different direction of the air. It is thought by the owner of the animal that the sound comes from the nose. During the time Dr. Abbot heard it, it was constantly gnawing the wires of its cage, producing a loud noise not in the least interfering with its music, which was kept up incessantly during the half hour he was examining it. Its movements are so rapid, constantly climbing on the wires of its cage, and gnawing them,

that it was extremely difficult to fix the eye long enough on its muzzle to ascertain precisely how the sounds were produced. It could be seen, however, that there was a constant tremulous motion of the upper lips and snout. On bringing the ear within three inches of the animal while singing, it was very evident that the interruptions between the notes and their various modulations were produced as the sound issued from the vocal organs, rather than in the throat. It usually begins its song at 9 or 10, P. M. and continues it all night; sometimes, when it is silent, striking a few notes on the piano will set it to singing again. During the day it sleeps most of the time; recently it has sung an hour or two in the afternoon. It is fed on Canary seed and Indian meal. Its appearance is in no way different from that of a common mouse.

Capt. Charles H. Matthews, of Sault St. Marie, and Capt. Nathaniel E. Atwood, of Provincetown, Mass., were elected Corresponding members.

ADDITIONS TO THE LIBRARY.

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. III. No. 10. July and August, 1847. *From the Academy.*

Annals and Magazine of Natural History. No. 133. October, 1847. 8vo. London. *From the Courtis Fund.*

Proceedings of the American Academy of Arts and Sciences. pp. 49 to 160. 8vo. pamph. Boston, 1847. *From the Academy.*

Gray's Genera of Birds. Part 41. London, 1847. *From the Courtis Fund.*

Map of that part of the Mineral Lands adjacent to Lake Superior. Washington, 1847. *From Hon. R. C. Winthrop.*

December 1, 1847.

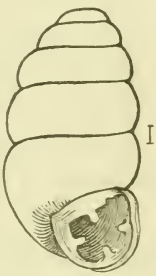
J. C. Warren, M. D., President, in the Chair.

Dr. Gould stated, that among the Shells collected by Dr. C. T. Jackson on the shores of Lake Superior, was a new species of *Physa*, which he exhibited and described;

together with two other new species of North American Shells.

PHYSA VINOSA. Testâ tenui, ovato-globosâ, badiâ, spiraliter minutissimè striatâ, epidermide tenui indutâ: spirâ obtusâ, anfr. 4, ultimo per-magno: aperturâ ovato-lunatâ, $\frac{3}{4}$ longitudinis æquante, hepaticâ; columellâ rectâ, tenui. Long. $\frac{3}{4}$, lat. $\frac{1}{2}$ poll. Brought by Dr. C. T. Jackson from the Lake Superior region.

A remarkably inflated species, most like P. *ancillaria*, but is not shouldered, nor widest behind the middle, nor tapering anteriorly. It is well distinguished by its thin structure, striated surface, wine-red color externally, and liver-brown internally.



PUPA DECORA. Testa minutâ, cylindraceâ, tenui, nitidâ, lucidâ, vinosâ, tennuissimé striatâ, perforatâ; spirâ anfr. 5-6 ventricosis, apice rotundatâ; suturâ profundâ: aperturâ circulari, posticè truncatâ, dentibus 4 armatâ, quorum uno posticé, uno ad columellam, duobus ad labrum positis; peristomate vix reflexo. Long. $\frac{1}{10}$, lat. $\frac{1}{20}$ poll. Brought by Mr. T. R. Dutton from the region of Lake Superior.

It is rather larger, more cylindrical, and darker colored than P. *corticaria*. Its aperture is smaller and differently armed. In form, color and armature it is more like P. *Gouldii*, Binney, which is not more than half its size.

NATICA FOSSATA. Testâ depressâ, orbiculato-conicâ, solidâ, tenuissimè striatâ, cinereo-albidâ, propè suturam purpurascente, subtus pallescente: spirâ anfr. 5 convexis, decliventibus, ad peripheriam subangulatis: aperturâ semilunari, fauce hepatico, callo columellari regionem umbilicalem semi-obtegente, castaneo; umbilico magno, profundo, canali profundo, precipiti, epidermide stramineo induto, circumacto. Lat. $1\frac{3}{4}$, alt. $1\frac{1}{4}$ poll. *Hab.* Florida Coast.

This would not at first sight be distinguished from N. *duplicata*, Say, which it precisely resembles in form and coloring. But the umbilical region is entirely different; and the deep, wide channel leading to the umbilicus and covered with epidermis is in striking contrast with the pale, polished region adjacent. In this aspect it is like N. *Lamarckiana*.

December 15, 1847.

J. C. Warren, M. D. President, in the Chair.

Dr. C. T. Jackson communicated a letter, addressed to him by a committee of the French Institute, inviting the coöperation of American Naturalists in erecting a Monument to the Memory of Geoffroy St. Hilaire. He advocated the proposal; and, after remarks by Dr. J. B. S. Jackson and others, it was *Voted*, That the letter be submitted to a committee of three, to consider and report thereon. The President, and Drs. C. T. and J. B. S. Jackson were chosen to constitute the committee.

Dr. C. T. Jackson presented, on behalf of Mr. Joy, a specimen of *Coluber occipito-maculatus*.

Dr. Gould presented, on behalf of Mr. James Mitchell, of Nantucket, a portion of the Cranium of a Ray.

Mr. Ayres exhibited the Jaws of *Carcharias ceruleus*, Dekay, showing that the teeth are serrated; as Dr. Storer had remarked at a previous meeting, that C. *obscurus*, Le Sueur, was the only Shark known on the Massachusetts coast with serrated teeth. He exhibited also the Jaws of C. *griseus*.

It may be doubted, whether this species can be retained in the genus Carcharias. The teeth are very similar to those of Scyllium; but from that genus it is separated by the position of the dorsal fins and by the absence of spiracles. The teeth of Carcharias are hollow at the base; in this specimen Mr. A. had cut two of the teeth across, near the base, showing that they were solid.

Mr. Desor remarked, that the species might probably be included in the genus Odontaspis of Agassiz.

Mr. F. J. Bumstead was elected a member of the Society.

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